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NATURAL HISTORY

CATALOGUE
OF 54.107 (54.1)
MAMMALIA

IN THE
INDIAN MUSEUM,
CALCUTTA.

BY
W. L. SCLATER, M.A., F.Z.S.,
DEPUTY SUPERINTENDENT OF THE INDIAN MUSEUM.

PART II.

Rodentia, Ungulata, Proboscidea, Hyracoidea, Carnivora, Cetacea,
Sirenia, Marsupialia, Monotremata.

CALCUTTA:
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INTRODUCTION.

Dr. Anderson, the late Superintendent, who was the author of the first part of the Catalogue of the Mammalia, which was published in 1881, was never able to complete the work ; the second half is therefore issued after a considerable number of years' delay.

It has been thought desirable to alter the form of the Catalogue somewhat from that of the first part, in which very nearly each specimen was separately described, sometimes at greater, sometimes at lesser, length. This course seemed to unduly swell the bulk of the work ; it was therefore decided to approximate the form of the Catalogue somewhat more to those of the British Museum without full descriptions of each species, but with such remarks as might be thought necessary to assist the identification of the purely Indian species. A key of Genera and Species has been added, and all the Indian species, whether the Museum contains examples of them or not, are included in the Catalogue.

The synonymy has not been worked out quite completely, but all the more important references, especially those found in Indian works, are given, and every reference, except those asterisked, has been carefully verified.

The total number of species included in the Catalogue amounts to 590, of which 276 are found within the Indian Empire and 314 are exotic. These 590 species are represented by 4,872 specimens, of which 1,330 belonged to the old Asiatic Society's collection and are to be found mentioned in Mr. Blyth's Catalogue, published in 1863, and the remaining 3,542 specimens have been added since that time.

Following the introduction will be found a separate list of the type specimens possessed by the Museum, which number 55, and also a list of Donors and Contributors, both before and since the year 1863.

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Y

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Z

Zoological Gardens.



SYSTEMATIC INDEX AND SUMMARY OF SPECIES AND SPECIMENS.

					NUMBER OF SPECIMENS.			Page.
					Asiatic Soc. Coll.	Indian Mus. Coll.	Total.	
Order RODENTIA.								
Sub-order SIMPLICIDENTATA.								
Division SCIURIMORPHA.								
Family SCIURIDÆ.								
1	Sciurus	bicolor	.	.	10	17	27	7
2	Sciurus	giganteus	.	.	3	39	42	8
3	Sciurus	indicus	.	.	8	19	27	10
4	Sciurus	macrourus	.	.	9	3	12	11
5	Sciurus	pygerythrus	.	.	4	14	18	11
6	Sciurus	blanfordi	.	.	1	1	2	12
7	Sciurus	phayrei	.	.	4	1	5	12
8	Sciurus	griseimanus	.	.	0	2	2	12
9	Sciurus	caniceps	.	.	6	29	35	13
10	Sciurus	atrodorsalis	.	.	5	47	52	15
11	Sciurus	erythræus	.	.	5	45	50	15
12	Sciurus	castaneoventris	.	.	2	0	2	17
13	Sciurus	sladeni	.	.	2	3	5	18
14	Sciurus	hippurus	.	.	2	1	3	18
15	Sciurus	lokroides	.	.	11	66	77	18
16	Sciurus	chinensis	.	.	0	1	1	19
17	Sciurus	tenuis	.	.	1	2	3	20
18	Sciurus	lokriah	.	.	5	10	15	20
19	Sciurus	rufigenis	.	.	0	0	0	21
20	Sciurus	alstoni	.	.	0	1	1	21
21	Sciurus	melanotis	.	.	0	1	1	21
22	Sciurus	quinquestriatus	.	.	0	4	4	21
23	Sciurus	ferrugineus	.	.	5	5	10	22
24	Sciurus	germani	.	.	0	1	1	22
25	Sciurus	badging	.	.	7	9	16	23
26	Sciurus	prevostii	.	.	3	7	10	23
27	Sciurus	palmarum	.	.	3	11	14	24
28	Sciurus	tristiatus	.	.	8	13	21	25
29	Sciurus	sublineatus	.	.	3	0	3	26
30	Sciurus	layardi	.	.	1	0	1	26
31	Sciurus	berdmorei	.	.	3	2	5	26
32	Sciurus	macclellandi	.	.	4	37	41	27
33	Sciurus	insignis	.	.	0	1	1	28

				NUMBER OF SPECIMENS.			Page.
				Asiatic Soc. Coll.	Indian Mus. Coll.	Total.	
Family SCIURIDÆ— <i>contd.</i>							
34	<i>Sciurus vulgaris</i>	.	.	4	1	5	28
35	<i>Sciurus fulvus</i>	.	.	0	1	1	28
36	<i>Sciurus carolinensis</i>	.	.	1	6	7	29
37	<i>Sciurus niger</i>	.	.	0	1	1	29
38	<i>Sciurus hudsonius</i>	.	.	1	3	4	29
39	<i>Sciurus annulatus</i>	.	.	0	2	2	30
40	<i>Rhinosciurus laticaudatus</i>	.	.	1	0	1	30
41	<i>Tamias striatus</i>	.	.	0	3	3	30
42	<i>Xerus rutilus</i>	.	.	0	3	3	31
43	<i>Xerus erythropus</i>	.	.	0	14	14	31
44	<i>Xerus capensis</i>	.	.	1	0	1	31
45	<i>Pteromys oral</i>	.	.	5	6	11	33
46	<i>Pteromys cineraceus</i>	.	.	2	2	4	33
47	<i>Pteromys alborufus</i>	.	.	4	7	11	34
48	<i>Pteromys yunnanensis</i>	.	.	0	4	4	35
49	<i>Pteromys magnificus</i>	.	.	4	3	7	35
50	<i>Pteromys albiventer</i>	.	.	1	7	8	35
51	<i>Pteromys caniceps</i>	.	.	2	4	6	36
52	<i>Pteromys nitidus</i>	.	.	2	3	5	36
53	<i>Sciuropterus fimbriatus</i>	.	.	1	7	8	37
54	<i>Sciuropterus alboniger</i>	.	.	2	8	10	38
55	<i>Sciuropterus pearsoni</i>	.	.	3	6	9	38
56	<i>Sciuropterus fuscocapillus</i>	.	.	0	0	0	39
57	<i>Sciuropterus sagitta</i>	.	.	4	0	4	39
58	<i>Sciuropterus spadaceus</i>	.	.	3	2	5	40
59	<i>Sciuropterus volucella</i>	.	.	0	2	2	40
60	<i>Eupetaurus cineraceus</i>	.	.	0	2	2	40
61	<i>Arctomys himalayanus</i>	.	.	2	4	6	41
62	<i>Arctomys hodgsoni</i>	.	.	1	14	15	42
63	<i>Arctomys caudatus</i>	.	.	1	9	10	43
64	<i>Arctomys aureus</i>	.	.	0	6	6	43
65	<i>Arctomys dichrous</i>	.	.	1	2	3	43
66	<i>Arctomys marmota</i>	.	.	0	1	1	44
67	<i>Arctomys monax</i>	.	.	0	2	2	44
Family CASTORIDÆ.							
68	<i>Castor fiber</i>	.	.	1	0	1	44
Division MYOMORPHA.							
Family MYOXIDÆ.							
69	<i>Myoxus pictus</i>	.	.	0	1	1	45
70	<i>Myoxus glis</i>	.	.	1	0	1	45
71	<i>Muscardinus avellenarius</i>	.	.	2	3	5	45

		NUMBER OF SPECIMENS.			Page.
		Asiatic Soc. Coll.	Indian Mus. Coll.	Total.	
Family MURIDÆ.					
72	Hydromys chrysogaster	1	0	1	45
73	Hydromys fulvolarvatus	1	4	5	46
74	Hydromys leucogaster	0	1	1	46
75	Platacanthomys lasiurus	4	22	26	46
76	Gerbillus indicus	6	26	32	47
77	Gerbillus cuvieri	10	23	33	47
78	Gerbillus persicus	0	3	3	49
79	Gerbillus erythrurus	0	7	7	49
80	Gerbillus meridianus	0	13	13	50
81	Gerbillus hurrianæ	0	40	40	50
82	Gerbillus nanus	0	9	9	51
83	Gerbillus gleadowi	0	2	2	52
84	Gerbillus swinhoei	0	0	0	52
85	Gerbillus pyramidarum	0	2	2	52
86	Gerbillus obesus	1	0	1	52
87	Isomys variegatus	0	1	1	53
88	Nesokia hardwickii	0	37	37	53
89	Nesokia sculleyi	0	3	3	53
90	Nesokia bengalensis	8	97	105	53
91	Nesokia kok	3	12	15	53
92	Nesokia bandicota	3	22	25	57
93	Nesokia nemorivagus	0	4	4	58
94	Nesokia sp ^p	0	1	1	59
95	Mus decumanus	8	47	55	61
96	Mus bowersii	0	1	1	62
97	Mus rattus	5	6	11	62
98	Mus alexandrinus	0	19	19	62
99	Mus nitidus	9	39	48	63
100	Mus rufescens	24	133	157	63
101	Mus andamanensis	2	8	10	63
102	Mus rubricosa	0	1	1	68
103	Mus concolor	4	20	24	68
104	Mus fulvescens	2	0	2	69
105	Mus jerdoni	1	11	12	69
106	Mus niviventer	0	0	0	70
107	Mus humei	0	1	1	70
108	Mus erythrotis	1	6	7	70
109	Mus blanfordi	0	2	2	70
110	Mus berdmorei	1	0	1	71
111	Mus urbanus	5	89	94	71
112	Mus sublimis	0	1	1	73
113	Mus bactrianus	5	52	57	74
114	Mus cervicolor	3	7	10	75
115	Mus arianus	0	16	16	75
116	Mus nitulidus	0	13	13	76
117	Mus mettada	0	17	17	76
118	Mus gleadowi	0	3	3	77

		NUMBER OF SPECIMENS.			Page.
		Asiatic Soc. Coll.	Indian Mus. Coll.	Total.	
Family MURIDÆ — contd.					
119	Mus wagneri	0	14	14	77
120	Mus musculus	2	4	6	78
121	Mus sylvaticus	3	6	9	78
122	Mus minutus	1	0	1	78
123	Mus abyssinicus	0	3	3	78
124	Mus pumilio	2	0	2	79
125	Mus longipilis	0	1	1	79
126	Mus assimilis	0	2	2	79
127	Mus gouldi	0	2	2	79
128	Leggada platythrix	5	5	10	80
129	Leggada buduga	11	44	55	80
130	Chiropodomys gliroides	3	2	5	82
131	Hapalomys longicaudatus	2	1	3	82
132	Vandeleuria oleracea	3	21	24	83
133	Golunda ellioti	5	7	12	83
134	Uromys macropus	0	2	2	84
135	Hapalotis apicalis	2	0	2	84
136	Hapalotis conditor	0	2	2	84
137	Hapalotis mitchelli	2	1	3	85
138	Hesperomys leucopus	0	3	3	85
139	Cricetus phæus	0	50	50	85
140	Cricetomys gambianus	0	1	1	87
141	Fiber zibethicus	1	3	4	87
142	Arvicola glareolus	8	0	8	89
143	Arvicola stoliczkanus	0	2	2	89
144	Arvicola stracheyi	0	1	1	90
145	Arvicola wyneei	1	2	3	90
146	Arvicola roylei	0	1	1	91
147	Arvicola blanfordi	0	5	5	91
148	Arvicola blythi	1	6	7	91
149	Arvicola amphibius	2	6	8	92
150	Arvicola nivalis	1	0	1	92
151	Arvicola agrestis	2	1	3	92
152	Arvicola guentheri	0	1	1	93
153	Arvicola sikkimensis	0	1	1	93
154	Hypudæus lemnus	2	0	2	93
155	Ellobius fuscocapillus	4	4	8	94
Family SPALACIDÆ.					
156	Spalax typhlus	3	1	4	94
157	Rhizomys sumatrensis	4	6	10	95
158	Rhizomys erythrogenys	1	4	5	96
159	Rhizomys pruinosus	3	23	26	96
160	Rhizomys badius	6	17	23	97
161	Bathyergus maritimus	3	0	3	98
162	Bathyergus splendens	0	3	3	98

				NUMBER OF SPECIMENS.			Page.
				Asiatic Soc. Coll.	Indian Mus. Coll.	Total.	
Family SPALACIDÆ— <i>contd.</i>							
163	Georychus	cœcutiens	.	3	0	3	98
164	Georychus	capensis	.	1	0	1	99
Family GEOMYIDÆ.							
165	Geomys	bursarius	.	0	2	2	99
Family ZAPODIDÆ.							
166	Zapus	hudsonius	.	0	1	1	99
Family DIPODIDÆ.							
167	Dipus	lagopus	.	0	7	7	100
168	Dipus	blanfordi	.	0	1	1	100
169	Dipus	jaculus	.	1	5	6	100
170	Alactaga	decumana	.	0	1	1	101
171	Alactaga	indica	.	1	2	3	101
Division HYSTRICOMORPHA.							
Family OCTODONTIDÆ.							
172	Pectinator	spekii	.	1	12	13	101
173	Schizodon	fuscus	.	0	1	1	102
174	Spalacopus	pœppigii	.	1	0	1	102
175	Octodon	degus	.	1	0	1	103
Family HYSTRICIDÆ.							
176	Syntheres	prehensilis	.	0	1	1	103
177	Erethizon	dorsatus	.	0	2	2	103
178	Atherura	macroura	.	3	3	6	104
179	Atherura	africana	.	0	1	1	104
180	Hystrix	cristata	.	0	1	1	105
181	Hystrix	leucurus	.	7	8	15	105
182	Hystrix	longicauda	.	9	9	18	106
183	Hystrix	yunnanensis	.	0	1	1	107
Family CHINCHILLIDÆ.							
184	Lagostomus	trichodactylus	.	0	1	1	108
185	Cœlogeny	paca	.	4	3	7	108
Family CAVIIDÆ.							
186	Cavia	porcellus	.	1	4	5	109
187	Cavia	australis	.	1	0	1	109
188	Hydrochœrus	capybara	.	1	1	2	109

				NUMBER OF SPECIMENS.			Page.
				Asiatic Soc. Coll.	Indian Mus. Coll.	Total.	
Sub-order <i>DUPLICIDENTATA</i> .							
Family LAGOMYIDÆ.							
189	Lagomys	ladaccensis	. . . .	1	24	25	110
190	Lagomys	macrotis	. . . .	0	14	14	110
191	Lagomys	rufescens	. . . .	2	21	23	111
192	Lagomys	roylei	. . . .	6	7	13	112
Family LEPORIDÆ.							
193	Lepus	hypsibius	. . . .	1	2	3	113
194	Lepus	pallipes	. . . .	0	8	8	114
195	Lepus	tibetanus	. . . .	0	11	11	114
196	Lepus	pamirensis	. . . .	0	2	2	114
197	Lepus	stoliczkanus	. . . .	0	2	2	115
198	Lepus	yarkandensis	. . . .	0	10	10	115
199	Lepus	dayanus	. . . .	1	4	5	115
200	Lepus	ruficaudatus	. . . .	5	7	12	116
201	Lepus	nigricollis	. . . .	3	6	9	116
202	Lepus	peguensis	. . . .	1	0	1	117
203	Lepus	sinensis	. . . .	2	0	2	117
204	Lepus	hispidus	. . . .	2	5	7	117
205	Lepus	europæus	. . . .	1	0	1	118
206	Lepus	cuniculus	. . . .	7	0	7	118
207	Lepus	timidus	. . . .	6	3	9	118
208	Lepus	ægyptius	. . . .	0	2	2	119
209	Lepus	tigrensis	. . . .	0	3	3	119
210	Lepus	capensis	. . . .	1	0	1	119
211	Lepus	saxatilis	. . . .	1	0	1	120
212	Lepus	americanus	. . . .	0	3	3	120
213	Lepus	sylvaticus	. . . .	0	3	3	120
214	Lepus	callotis	. . . .	0	1	1	120
Order UNGULATA.							
Sub-order ARTIODACTYLA.							
Family BOVIDÆ.							
1	Bos	gaurus	. . . .	8	17	25	124
2	Bos	frontalis	. . . .	5	7	12	126
3	Bos	sondaicus	. . . .	5	5	10	127
4	Bos	grunniens	. . . .	3	5	8	128
5	Bos	bubalus	. . . .	7	13	20	129
6	Bos	depressicornis	. . . .	0	4	4	130
7	Bos	caffer	. . . .	2	1	3	130
8	Bos	americanus	. . . .	0	3	3	131
9	Bos	taurus	. . . .	0	3	3	131

					NUMBER OF SPECIMENS.			Page.
					Asiatic Soc. Coll.	Indian Mus. Coll.	Total.	
Family BOVIDÆ— <i>contd.</i>								
10	Ovis poli	.	.	.	2	14	16	133
11	Ovis hodgsoni	.	.	.	5	6	11	136
12	Ovis canadensis	.	.	.	0	2	2	137
13	Ovis cycloceros	.	.	.	5	9	14	138
14	Ovis vignei	.	.	.	1	1	2	139
15	Ovis gmelini	.	.	.	2	4	6	139
16	Ovis nahoor	.	.	.	12	15	27	140
17	Ovis tragelaphus	.	.	.	0	1	1	141
18	Capra ægagrus	.	.	.	1	13	14	142
19	Capra siberica	.	.	.	3	17	20	143
20	Capra sinaitica	.	.	.	0	1	1	144
21	Capra falconeri	.	.	.	2	7	9	145
22	Capra jemlaica	.	.	.	7	2	9	146
23	Capra hyllocrius	.	.	.	3	4	7	146
24	Capra hircus	.	.	.	1	7	8	147
25	Nemorhædus goral	.	.	.	4	9	13	148
26	Nemorhædus caudatus	.	.	.	0	1	1	149
27	Nemorhædus bubalina	.	.	.	0	8	8	149
28	Nemorhædus sumatrensis	.	.	.	5	8	13	150
29	Rupicapra tragus	.	.	.	0	2	2	151
30	Haploceros montanus	.	.	.	0	1	1	151
31	Budorcas taxicolor	.	.	.	5	9	14	151
32	Oreas canna	.	.	.	1	1	2	152
33	Strepsiceros kudu	.	.	.	1	0	1	153
34	Strepsiceros imberbis	.	.	.	0	2	2	153
35	Tragelaphus sylvaticus	.	.	.	0	1	1	154
36	Boselaphus tragocamelus	.	.	.	7	7	14	154
37	Oryx gazella	.	.	.	1	0	1	155
38	Oryx beisa	.	.	.	0	4	4	155
39	Oryx beatrix	.	.	.	1	0	1	156
40	Oryx leucoryx	.	.	.	0	2	2	156
41	Hippotragus equinus	.	.	.	1	0	1	156
42	Gazella dorcas	.	.	.	0	4	4	157
43	Gazella isabella	.	.	.	0	4	4	157
44	Gazella spekii	.	.	.	2	0	2	158
45	Gazella arabica	.	.	.	8	10	18	158
46	Gazella bennettii	.	.	.	1	32	33	159
47	Gazella fuscifrons	.	.	.	0	1	1	160
48	Gazella subgutturosa	.	.	.	4	15	19	160
49	Gazella picticaudata	.	.	.	3	3	6	161
50	Gazella søemmeringi	.	.	.	0	3	3	161
51	Gazella euchore	.	.	.	1	0	1	162
52	Antilope cervicapra	.	.	.	10	19	29	162
53	Pantholops hodgsoni	.	.	.	3	4	7	163
54	Kobus ellipsiprymnus	.	.	.	0	1	1	164
55	Cervicapra arundinacea	.	.	.	0	1	1	164
56	Neotragus saltianus	.	.	.	0	14	14	165

	NUMBER OF SPECIMENS.			Page.
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Family BOVIDÆ— <i>contd.</i>				
56 <i>Neotragus kirkii</i>	1	0	1	166
57 <i>Nanotragus tragulus</i>	1	0	1	166
58 <i>Nanotragus montanus</i>	0	1	1	166
59 <i>Nanotragus melanotis</i>	1	0	1	167
60 <i>Nanotragus oreotragus</i>	2	2	4	167
61 <i>Cephalophus mergeus</i>	1	0	1	167
62 <i>Cephalophus natalensis</i>	1	0	1	168
63 <i>Cephalophus mandoqua</i>	0	2	2	168
64 <i>Tetraceros quadricornis</i>	9	11	20	168
65 <i>Æpyceros melampus</i>	1	0	1	169
66 <i>Alcephelus caama</i>	1	1	2	170
67 <i>Connochætes gnu</i>	0	3	3	170
Family ANTILOCAPRIDÆ.				
68 <i>Antilocapra americana</i>	0	4	4	171
Family GIRAFFIDÆ.				
69 <i>Giraffa camelopardalis</i>	1	6	7	171
Family CERVIDÆ.				
70 <i>Moschus moschiferus</i>	5	13	18	172
71 <i>Cervus muntjac</i>	10	19	29	173
72 <i>Cervus reevesi</i>	1	1	2	174
73 <i>Cervus aristotelis</i>	36	27	63	176
74 <i>Cervus swinhoei</i>	0	1	1	178
75 <i>Cervus porcinus</i>	20	19	39	178
76 <i>Cervus hippelaphus</i>	9	3	12	179
77 <i>Cervus duvauceli</i>	19	10	29	179
78 <i>Cervus schomburgki</i>	1	1	2	180
79 <i>Cervus eldi</i>	14	2	10	180
80 <i>Cervus axis</i>	16	14	30	181
81 <i>Cervus dybowskii</i>	0	1	1	182
82 <i>Cervus sika</i>	0	1	1	183
83 <i>Cervus taëvanus</i>	1	0	1	183
84 <i>Cervus elaphus</i>	5	2	7	183
85 <i>Cervus eustephanus</i>	0	1	1	184
86 <i>Cervus affinis</i>	2	4	6	184
87 <i>Cervus cashmeerianus</i>	0	8	8	184
88 <i>Cervus canadensis</i>	1	5	6	185
89 <i>Cervus dama</i>	8	5	13	186
90 <i>Alces machlis</i>	2	2	4	186
91 <i>Capreolus capræa</i>	7	3	10	187
92 <i>Cariacus virginianus</i>	3	5	8	187
93 <i>Rangifer tarandus</i>	2	3	5	188

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Family TRAGULIDÆ.				
94 <i>Tragulus memminna</i>	2	9	11	189
95 <i>Tragulus kanchil</i>	5	24	29	189
96 <i>Tragulus napu</i>	2	9	11	190
97 <i>Tragulus stanleyanus</i>	0	8	8	191
Family CAMELIDÆ.				
98 <i>Camelus bactrianus</i>	0	3	3	191
99 <i>Camelus dromedarius</i>	1	6	7	192
100 <i>Auchenia glama</i>	1	8	9	192
Family SUIDÆ.				
101 <i>Sus cristatus</i>	18	12	30	193
102 <i>Sus andamanensis</i>	18	7	25	195
103 <i>Sus scrofa</i>	1	2	3	195
104 <i>Porcula salvania</i>	0	13	13	195
105 <i>Babyrussa alfurus</i>	2	1	3	196
Family DICOTYLIDÆ.				
106 <i>Dicotylus tajacu</i>	1	2	3	196
Family PHACOCHERIDÆ.				
107 <i>Phacochærus æthiopicus</i>	2	0	2	197
108 <i>Phacochærus africanus</i>	0	2	2	197
Family HIPPOPOTAMIDÆ.				
109 <i>Hippopotamus amphibius</i>	4	1	5	197
Sub-order PERISSODACTYLA.				
Family TAPIRIDÆ.				
110 <i>Tapirus indicus</i>	4	8	12	198
Family EQUIDÆ.				
111 <i>Equus hæmionus</i> var. <i>indicus</i>	1	4	5	198
112 <i>Equus hæmionus</i> var. <i>kiang</i>	4	1	5	199
113 <i>Equus burchelli</i>	0	2	2	200
114 <i>Equus asinus</i>	1	2	3	200
115 <i>Equus caballus</i>	9	9	18	200

					NUMBER OF SPECIMENS.			Page.	
					Asiatic Soc. Coll.	Indian Mus. Coll.	Total.		
Family RHINOCEROTIDÆ.									
116	Rhinoceros	unicornis	.	.	.	5	12	17	202
117	Rhinoceros	sondaicus	.	.	.	6	16	22	202
118	Rhinoceros	lasiotis	.	.	.	0	0	0	204
119	Rhinoceros	sumatrensis	.	.	.	7	11	18	204
120	Rhinoceros	bicornis	.	.	.	2	0	2	205
121	Rhinoceros	simus	.	.	.	1	0	1	206
Order PROBOSCIDEA.									
Family ELEPHANTIDÆ.									
1	Elephas	indicus	.	.	.	9	24	33	206
2	Elephas	africanus	.	.	.	1	3	4	208
Order HYRACOIDÆ.									
Family HYRACIDÆ.									
1	Hyrax	capensis	.	.	.	8	0	8	208
2	Hyrax	brucei	.	.	.	1	9	10	209
Order CARNIVORA.									
Sub-order FISSIPEDIA.									
Division ÆLUROIDEA.									
Family FELIDÆ.									
1	Felis	leo	.	.	.	4	9	13	214
2	Felis	tigris	.	.	.	10	20	30	216
3	Felis	uncia	.	.	.	1	7	8	217
4	Felis	pardus	.	.	.	6	28	34	218
5	Felis	nebulosa	.	.	.	2	5	7	220
6	Felis	marmorata	.	.	.	2	7	9	221
7	Felis	temmincki	.	.	.	0	5	5	222
8	Felis	planiceps	.	.	.	1	2	3	222
9	Felis	bengalensis	.	.	.	5	31	36	223
10	Felis	viverrina	.	.	.	3	10	13	225
11	Felis	rubiginosa	.	.	.	0	5	5	225
12	Felis	manul	.	.	.	0	0	0	226
12	Felis	ornata	.	.	.	3	17	20	226
13	Felis	shawiana	.	.	.	0	3	3	227
14	Felis	chaus	.	.	.	7	30	37	227
15	Felis	caudata	.	.	.	0	1	1	229
16	Felis	lynx	.	.	.	7	5	12	229
17	Felis	caracal	.	.	.	1	8	9	230
18	Felis	concolor	.	.	.	1	3	4	230

					NUMBER OF SPECIMENS.			Page.
					Astatic Soc. Coll.	Indian Mus. Coll.	Total.	
Family FELIDÆ—contd.								
19	<i>Felis yagonaroundi</i>	.	.	.	0	1	1	231
20	<i>Felis pardalis</i>	.	.	.	1	1	2	231
21	<i>Felis serval</i>	.	.	.	1	0	1	231
22	<i>Felis caffra</i>	.	.	.	2	0	2	232
23	<i>Felis catus</i>	.	.	.	1	0	1	232
24	<i>Felis pardina</i>	.	.	.	0	1	1	232
25	<i>Felis canadensis</i>	.	.	.	0	4	4	232
26	<i>Felis rufa</i>	.	.	.	1	2	3	233
27	<i>Felis domestica</i>	.	.	.	8	6	14	233
28	<i>Cynælurus jubatus</i>	.	.	.	2	6	8	235
Family VIVERRIDÆ.								
29	<i>Viverra zibetha</i>	.	.	.	4	9	13	236
30	<i>Viverra civettina</i>	.	.	.	1	3	4	237
31	<i>Viverra megaspila</i>	.	.	.	0	0	0	237
32	<i>Viverra tangalanga</i>	.	.	.	2	7	9	237
33	<i>Viverra civetta</i>	.	.	.	0	1	1	238
34	<i>Viverricula malaccensis</i>	.	.	.	12	13	25	238
35	<i>Prionodon maculosus</i>	.	.	.	0	0	0	239
36	<i>Prionodon pardicolor</i>	.	.	.	3	4	7	240
37	<i>Genetta vulgaris</i>	.	.	.	1	0	1	240
38	<i>Genetta tigrina</i>	.	.	.	2	0	2	240
39	<i>Hemigale hardwickii</i>	.	.	.	1	0	1	241
40	<i>Arctogale trivirgata</i>	.	.	.	0	1	1	241
41	<i>Arctogale leucotis</i>	.	.	.	6	5	11	241
42	<i>Paradoxurus hermaphroditus</i>	.	.	.	0	15	15	243
43	<i>Paradoxurus strictus</i>	.	.	.	0	4	4	244
44	<i>Paradoxurus niger</i>	.	.	.	6	16	22	244
45	<i>Paradoxurus macrodus</i>	.	.	.	4	2	6	246
46	<i>Paradoxurus jerdoni</i>	.	.	.	0	1	1	246
47	<i>Paradoxurus aureus</i>	.	.	.	3	1	4	247
48	<i>Paradoxurus grayi</i>	.	.	.	9	15	24	247
49	<i>Paradoxurus leucomystax</i>	.	.	.	3	3	6	248
50	<i>Paradoxurus laniger</i>	.	.	.	0	0	0	249
51	<i>Arctictis binturong</i>	.	.	.	3	10	13	249
52	<i>Cynogale bennetti</i>	.	.	.	1	1	2	250
53	<i>Eupleres goudoti</i>	.	.	.	0	2	2	250
54	<i>Herpestes auro punctatus</i>	.	.	.	9	24	33	251
55	<i>Herpestes birmanicus</i>	.	.	.	1	3	4	252
56	<i>Herpestes mungo</i>	.	.	.	5	18	23	253
57	<i>Herpestes ferrugineus</i>	.	.	.	1	2	3	254
58	<i>Herpestes smithi</i>	.	.	.	1	2	3	254
59	<i>Herpestes fuscus</i>	.	.	.	1	0	1	255
60	<i>Herpestes fulvescens</i>	.	.	.	2	1	3	255
61	<i>Herpestes brachyurus</i>	.	.	.	2	1	3	255
62	<i>Herpestes vitticollis</i>	.	.	.	3	2	5	256

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Family VIVERRIDÆ— <i>contd.</i>								
63	<i>Herpestes urva</i>	.	.	.	2	6	8	256
64	<i>Herpestes caffer</i>	.	.	.	2	1	3	256
65	<i>Herpestes galera</i>	.	.	.	1	0	1	257
66	<i>Herpestes gracilis</i>	.	.	.	0	4	4	257
67	<i>Crossarchus fasciatus</i>	.	.	.	1	1	2	258
Family PROTELIDÆ.								
68	<i>Proteles cristatus</i>	.	.	.	1	0	1	258
Family HYÆNIDÆ.								
69	<i>Hyæna striata</i>	.	.	.	4	17	21	258
70	<i>Hyæna crocuta</i>	.	.	.	1	1	2	259
Division CYNOIDEA.								
Family CANIDÆ.								
71	<i>Cuon dukhunensis</i>	.	.	.	5	10	15	260
72	<i>Cuon alpinus</i>	.	.	.	1	0	1	261
73	<i>Canis lupus</i>	.	.	.	0	11	11	262
74	<i>Canis laniger</i>	.	.	.	7	2	9	262
75	<i>Canis pallipes</i>	.	.	.	2	20	22	263
76	<i>Canis lagopus</i>	.	.	.	2	3	5	264
77	<i>Canis aureus</i>	.	.	.	9	20	29	264
78	<i>Canis mesomelas</i>	.	.	.	0	1	1	266
79	<i>Canis variegatus</i>	.	.	.	1	1	2	266
80	<i>Canis procyonides</i>	.	.	.	0	1	1	266
81	<i>Canis familiaris</i>	.	.	.	7	14	21	266
82	<i>Canis dingo</i>	.	.	.	2	2	4	266
83	<i>Vulpes alopes</i>	.	.	.	5	0	5	268
84	<i>Vulpes fulvus</i>	.	.	.	1	2	3	268
85	<i>Vulpes montanus</i>	.	.	.	6	43	49	268
86	<i>Vulpes leucopus</i>	.	.	.	7	16	23	270
87	<i>Vulpes bengalensis</i>	.	.	.	6	19	25	271
88	<i>Vulpes ferrilatus</i>	.	.	.	3	0	3	272
89	<i>Vulpes cana</i>	.	.	.	0	0	0	272
90	<i>Vulpes caama</i>	.	.	.	1	0	1	273
91	<i>Vulpes virginiana</i>	.	.	.	1	0	1	273
Division ARCTOIDEA.								
Family MUSTELIDÆ.								
92	<i>Mustela flavigula</i>	.	.	.	7	19	26	273
93	<i>Mustela martes</i>	.	.	.	1	2	3	274

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					Asiatic Soc. Coll.	Indian Mus. Coll.	Total	
Family MUSTELIDÆ— <i>contd.</i>								
94	Mustela	foina	.	.	5	17	22	275
95	Mustela	zibellina	.	.	1	0	1	276
96	Mustela	pennanti	.	.	0	1	1	276
97	Mustela	americana	.	.	0	1	1	276
98	Putorius	foetidus	.	.	3	2	5	277
99	Putorius	furio	.	.	1	6	7	277
100	Putorius	larvatus	.	.	0	0	0	278
101	Putorius	sarmaticus	.	.	2	6	8	278
102	Putorius	erminea	.	.	8	4	12	278
103	Putorius	vulgaris	.	.	8	1	9	279
104	Putorius	stoliczkanus	.	.	0	2	2	280
105	Putorius	subhemachalanus	.	.	1	2	3	280
106	Putorius	canigula	.	.	0	2	2	280
107	Putorius	alpinus	.	.	0	5	5	281
108	Putorius	kathiah	.	.	1	5	6	281
109	Putorius	strigidorsus	.	.	0	2	2	282
110	Putorius	sibericus	.	.	2	0	2	282
111	Putorius	vison	.	.	1	2	3	282
112	Gulo	luscus	.	.	1	1	2	283
113	Galictis	barbara	.	.	0	1	1	283
114	Galictis	vittata	.	.	0	2	2	284
115	Ictonyx	zorilla	.	.	1	1	2	284
116	Helictis	orientalis	.	.	0	0	1	286
117	Helictis	personata	.	.	4	1	5	286
118	Helictis	moschata	.	.	0	2	2	286
119	Mellivora	indica	.	.	4	5	9	287
120	Meles	taxus	.	.	3	7	10	288
121	Meles	lencura	.	.	1	0	1	289
122	Meles	sp.	.	.	0	1	1	289
123	Mydaus	meliceps	.	.	0	1	1	289
124	Arctonyx	collaris	.	.	6	6	12	290
125	Arctonyx	taxoides	.	.	2	0	2	291
126	Mephitis	mephitis	.	.	0	4	4	291
127	Lutra	vulgaris	.	.	12	47	59	292
128	Lutra	elliotti	.	.	8	22	30	294
129	Lutra	aurobrunnea	.	.	0	0	0	295
130	Lutra	leptonyx	.	.	9	19	28	295
131	Lutra	canadensis	.	.	0	1	1	297
132	Lutra	brasiliensis	.	.	0	1	1	297
133	Enhydra	lutris	.	.	0	2	2	297
Family PROCYONIDÆ								
134	Procyon	lotor	.	.	2	7	9	298
135	Nasua	rufa	.	.	1	5	6	298
136	Nasua	nasica	.	.	0	2	2	298
137	Cercoleptes	caudivolvulus	.	.	1	1	2	299

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Family PROCVONIDÆ— <i>contd.</i>					
138	<i>Aelurus fulgens</i>	0	21	21	300
139	<i>Aeluropus melanoleucus</i>	0	1	1	301
Family URSIDÆ.					
140	<i>Ursus isabellinus</i>	6	11	17	302
141	<i>Ursus pruinosus</i>	1	1	2	302
142	<i>Ursus torquatus</i>	2	15	17	303
143	<i>Ursus malayanus</i>	3	12	15	304
144	<i>Ursus arctos</i>	2	3	6	304
145	<i>Ursus japonicus</i>	0	1	1	305
146	<i>Ursus americanus</i>	1	1	2	305
147	<i>Ursus maritimus</i>	2	2	4	305
148	<i>Melursus ursinus</i>	12	9	21	306
Sub-order PINNIPEDIA.					
Family TRICHECHIDÆ.					
149	<i>Trichechus rosmarus</i>	3	1	4	307
Family PHOCIDÆ.					
150	<i>Phoca vitulina</i>	1	0	1	307
151	<i>Phoca groenlandica</i>	2	0	2	308
152	<i>Phoca barbata</i>	1	0	1	308
153	<i>Stenorhynchus carcinophagus</i>	0	1	1	308
154	<i>Cystophora cristata</i>	3	0	3	309
155	<i>Macrorhinus leoninus</i>	1	0	1	309
Order CETACEA.					
Sub-order MYSTACOCETI.					
Family BALÆNIDÆ.					
1	<i>Balæna australis</i>	1	0	1	312
2	<i>Balæna mysticetus</i>	1	0	1	312
3	<i>Balænoptera indica</i>	1	1	2	313
4	<i>Balænoptera blythi</i>	0	1	1	314
5	<i>Balænoptera edeni</i>	0	3	3	314
Sub-order ODONTOCETI.					
Family PHYSETERIDÆ.					
6	<i>Physeter macrocephalus</i>	4	3	7	314
7	<i>Kogia breviceps</i>	0	0	0	315

				NUMBER OF SPECIMENS.			Page.
				Asiatic Soc. Coll.	Indian Mus. Coll.	TOTAL.	
Family PLATANISTIDÆ.							
8	Platanista gangetica	.	.	6	27	33	315
Family DELPHINIDÆ.							
9	Monodon monoceras	.	.	1	1	2	317
10	Delphinapterus leucas	.	.	1	0	1	317
11	Phocæna communis	.	.	3	0	3	317
12	Neomeris phocænoides	.	.	1	1	2	318
13	Orcella brevirostris	.	.	2	9	11	318
14	Orcella fluminalis	.	.	0	3	3	319
15	Globicephalus melas	.	.	1	0	1	319
16	Globicephalus indicus	.	.	2	1	3	319
17	Lagenorhynchus acutus	.	.	1	0	1	321
18	Lagenorhynchus electra	.	.	0	0	0	321
19	Delphinus delphis	.	.	1	2	3	321
20	Delphinus frithi	.	.	1	0	1	322
21	Delphinus pomeeagra	.	.	0	0	0	322
22	Delphinus longirostris	.	.	0	0	0	322
23	Tursiops tursio	.	.	2	1	3	323
24	Tursiops perniger	.	.	1	0	1	323
25	Prodelphinus obscurus	.	.	1	1	2	324
26	Prodelphinus attenuatus	.	.	6	0	6	324
27	Steno rostratus	.	.	2	1	3	324
28	Sotalia gadamu	.	.	1	0	1	325
29	Sotalia plumbea	.	.	0	0	0	325
30	Sotalia lentiginosa	.	.	0	0	0	325
Order SIRENIA.							
Family HALICORIDÆ.							
1	Halicore dugong	.	.	2	6	8	326
2	Halicore australis	.	.	0	2	2	327
Order EDENTATA.							
Family BRADYPODIDÆ.							
1	Cholopus didactylus	.	.	0	1	1	328
2	Cholopus hoffmanni	.	.	0	1	1	328
Family MYRMECOPHAGIDÆ.							
3	Myrmecophaga jubata	.	.	1	0	1	328

				NUMBER OF SPECIMENS.			Page.
				Asiatic Soc. Coll.	Indian Mus. Coll.	TOTAL.	
Family DASYPODIDÆ.							
4	Tatusia novemcincta	.	.	0	1	1	329
5	Dasypus sexcinctus	.	.	1	3	4	329
Family MANIDÆ.							
6	Manis pentadactyla	.	.	6	12	18	330
7	Manis aurita	.	.	3	28	31	330
8	Manis javanica	.	.	6	5	11	331
Family ORYCTEROPODIDÆ.							
9	Orycteropus capensis	.	.	1	0	1	332
Order MARSUPIALIA.							
Family MACROPODIDÆ.							
1	Macropus giganteus	.	.	3	5	8	333
2	Macropus rufus	.	.	0	5	5	333
3	Macropus ualabatus	.	.	1	3	4	333
4	Macropus ruficollis	.	.	0	3	3	334
5	Macropus bennettii	.	.	3	0	3	334
6	Macropus dorsalis	.	.	0	1	1	334
7	Macropus agilis	.	.	0	1	1	334
8	Macropus thetidis	.	.	2	0	2	335
9	Macropus eugenii	.	.	0	3	3	335
10	Macropus billardieri	.	.	0	3	3	335
11	Macropus brachyurus	.	.	1	0	1	335
12	Petrogale xanthopus	.	.	1	6	7	336
13	Petrogale penicillata	.	.	0	2	2	336
14	Onychogale frenata	.	.	2	1	3	336
15	Onychogale lunata	.	.	0	3	3	337
16	Dorcopsis mulleri	.	.	1	0	1	337
17	Lagostrophus fasciatus	.	.	0	2	2	337
18	Aepyprymnus rufescens	.	.	0	1	1	338
19	Bettongia cuniculus	.	.	1	0	1	338
20	Bettongia penicillata	.	.	0	2	2	338
21	Bettongia lesueuri	.	.	0	4	4	338
Family PHALANGERIDÆ.							
22	Tarsipes rostratus	.	.	0	1	1	339
23	Acrobates pygmæus	.	.	1	1	2	339
24	Dromicia nana	.	.	0	1	1	339
25	Petaurus australis	.	.	2	2	4	340
26	Petaurus breviceps	.	.	0	4	4	340
27	Petauroides volans	.	.	2	2	4	340

				NUMBER OF SPECIMENS.			Page.
				Asiatic Soc. Coll.	Indian Mus. Coll.	TOTAL.	
Family PHALANGERIDÆ— <i>contd.</i>							
28	Pseudochirus peregrinus	.	.	0	2	2	341
29	Pseudochirus occidentalis	.	.	0	1	1	341
30	Pseudochirus cooki	.	.	0	1	1	341
31	Trichosurus vulpecula	.	.	1	9	10	341
32	Trichosurus fuliginosus	.	.	3	3	6	342
33	Trichosurus caninus	.	.	0	1	1	342
34	Phalanger orientalis	.	.	0	1	1	343
35	Phalanger celebensis	.	.	0	2	2	343
36	Phascolarctus cinereus	.	.	0	6	6	343
Family PHASCOLOMYIDÆ.							
37	Phascolomys mitchelli	.	.	0	3	3	344
38	Phascolomys ursinus	.	.	1	2	3	344
39	Phascolomys latifrons	.	.	0	2	2	344
Family PERAMELIDÆ.							
40	Peragale lagotis	.	.	0	2	2	344
41	Perameles obesula	.	.	2	4	6	345
42	Perameles nasuta	.	.	0	1	1	345
43	Perameles gunni	.	.	1	1	2	345
44	Perameles bongainvillei	.	.	0	1	1	345
Family DASYURIDÆ.							
45	Thylacinus cynocephalus	.	.	3	0	3	346
46	Sarcophilus ursinus	.	.	1	1	2	346
47	Dasyurus maculatus	.	.	0	4	4	346
48	Dasyurus viverrinus	.	.	2	4	6	347
49	Dasyurus geoffroyi	.	.	1	3	4	347
50	Phascogale flavipes	.	.	1	0	1	347
51	Phascogale penicillata	.	.	0	2	2	347
52	Sminthopsis crassicaudata	.	.	1	0	1	348
53	Myrmecobius fasciatus	.	.	0	1	1	348
Family DIDELPHYIDÆ.							
54	Didelphys marsupialis	.	.	0	1	1	348
Order MONOTREMATA.							
Family ECHIDNIDÆ.							
1	Echidna aculeata	.	.	3	3	6	349
Family ORNITHORHYNCHIDÆ.							
2	Ornithorhynchus anatinus	.	.	2	5	7	349

Summary.

ORDERS.	NUMBER OF SPECIES.			NUMBER OF SPECIMENS.		
	Indian.	Exotic.	TOTAL.	A.S.B.	I.M.	TOTAL.
Rodentia	113	101	214	430	1,715	2,145
Ungulata	53	68	121	410	679	1,089
Proboscidea	1	1	2	10	27	37
Hyracoidea	0	2	2	9	9	18
Carnivora	83	73	156	369	876	1,245
Cetacea	22	8	30	40	55	95
Sirenia	1	1	2	2	8	10
Edentata	3	6	9	18	51	69
Marsupialia	0	54	54	37	114	151
Monotremata	0	2	2	5	8	13
TOTAL	276	316	592	1,330	3,542	4,872

List of types in the Indian Museum.

No.	Description of Specimens.	Type as described.	Author.
1	Stuffed and skull	<i>Sciurus blanfordi</i>	Blyth.
1	Stuffed and skull	<i>Sciurus sladeni</i>	Anderson.
1	Skin	<i>Sciurus alstoni</i>	Anderson.
1	Stuffed	<i>Sciurus quinquestriatus</i>	Anderson.
1	Skin and skull	<i>Sciurus layardi</i>	Blyth.
1	Skin	<i>Sciurus fulvus</i>	Blanford.
1	Skin and skull	<i>Pteromys cineraceus</i>	Blyth.
4	Skins	<i>Pteromys yunnanensis</i>	Anderson.
3	Skins	<i>Sciuropterus spadaceus</i>	Blyth.
1	Skin and skull	<i>Eupetaurus cineraceus</i>	Thomas.*
1	Skin and skull	<i>Spermophilus bactrianus</i>	Scully.
1	Skin and skull	<i>Arctomys aureus</i>	Blanford.
1	Alcohol	<i>Myoxus pictus</i>	Blanford.*
1	Alcohol and skull	<i>Gerbillus persicus</i>	Blanford.
1	Alcohol and skull	<i>Gerbillus nanus</i>	Blanford.
1	Skin and skull	<i>Nesokia scullyi</i>	Wood-Mason.
1	Alcohol and skull	<i>Mus bowersii</i>	Anderson.
2	Skins and skulls	<i>Mus andamanensis</i>	Blyth.
1	Alcohol and skull	<i>Mus rubricosa</i>	Anderson.
3	Alcohol and skulls	<i>Mus concolor</i>	Blyth.
1	Skin and skull	<i>Mus jerdoni</i>	Blyth.
1	Alcohol	<i>Mus erythrotis</i>	Blyth.
1	Skull	<i>Mus berdmorei</i>	Blyth.
1	Alcohol and skull	<i>Mus sublimis</i>	Blanford.
2	Alcohol, 1 skull	<i>Mus arianus</i>	Blanford.†

* Co-types in the British Museum.

Described as *M. erythronotus*; name afterwards changed.

List of types in the Indian Museum—*contd.*

No.	Description of Specimens.	Type as described.	Author.
1	Skin, 1 alcohol and skull.	<i>Hapalomys longicaudatus</i> .	Blyth.
2	Skins and skulls .	<i>Arvicola stoliczkanus</i> .	Blanford.
2	Alcohol, 2 skulls .	<i>Arvicola blanfordi</i> .	Scully.
1	Alcohol, 1 skull .	<i>Arvicola blythi</i> .	Blyth *
2	Skins . .	<i>Rhizomys erythrogenys</i> .	Anderson.
3	Stuffed . .	<i>Rhizomys pruinosus</i> .	Blyth.
1	Skin . .	<i>Pectinator spekii</i> .	Blyth.
1	Skin, skull . .	<i>Hystrix yunnanensis</i> .	Anderson.
2	Skins, 1 skull .	<i>Lepus hypsibius</i> .	Blanford.
2	Skins . .	<i>Lepus stoliczkanus</i> .	Blanford.
1	Skin and skull .	<i>Lepus peguensis</i> .	Blyth.
2	Stuffed heads .	<i>Gazella spekii</i> .	Blyth.
1	Skin with head .	<i>Gazella fuscifrons</i> .	Blanford.
1	Skull . .	<i>Cervus taevanus</i> .	Blyth.
1	Pr. horns . .	<i>Cervus eustephanus</i> .	Blanford.
1	Skin and skeleton .	<i>Felis shawiana</i> .	Blanford.
1	Skin and skull .	<i>Viverra civettina</i> .	Blyth.
1	Stuffed and skull .	<i>Vulpes montana</i> .	Pearson.
1	Stuffed . .	<i>Vulpes leucopus</i> .	Blyth.
1	Skin . .	<i>Putorius stoliczkanus</i> .	Blanford.
1	Stuffed and skull .	<i>Arctonyx taxoides</i> .	Blyth.
1	Skin and skull .	<i>Lutra ellioti</i> .	Anderson.
1	Skeleton (pt.) .	<i>Balænoptera indica</i> .	Blyth.
1	Skeleton (pt.) .	<i>Balænoptera blythi</i> .	Anderson.
1	Skeleton (pt.) .	<i>Balænoptera edeni</i> .	Anderson.
1	Skeleton . .	<i>Orcella fluminalis</i> .	Anderson.
1	Skeleton } .	<i>Globicephalus indicus</i> .	Blyth.
1	Skull } .		
1	Skull . .	<i>Delphinus frithi</i> .	Blyth.
1	Stuffed and skull (pt.)	<i>Delphinus perniger</i> .	Blyth.
TOTAL NUMBER OF TYPES,—			
55.			

* Described by Blyth as *Phaomys leucurus*; name altered by Blanford.

CATALOGUE OF MAMMALIA.

INDIAN MUSEUM.

PART II.

Order RODENTIA.

The Rodentia are Mammals characterized by the following points of structure :—a middle pair of long, curved, rootless, persistent incisors ; no canines ; three molars above and below [except *Hydromys*] ; temporal and orbital fossæ of skull confluent, the lacrymal foramen opening within it ; a distinct interparietal present ; scapula narrow, with a deep notch and a well developed acromion ; manus, five or four digits ; pes, three to five digits ; placenta deciduate and discoidal.

A general account of the classification and of the genera of the group by E. R. Alston will be found in P. Z. S., 1876, p. 61 ; it is mainly on this paper that the following key of the Indian Genera is based.

Key of the Indian Genera.

- a. Only one pair of incisors above ; skull with a true alisphenoid canal ; optic foramina rarely confluent ; bony palate well developed ; fibula never articulates with the calcaneum ; testes abdominal, descending periodically. [=Simplicidentata.]
- b. Two premolars above and below ; post-orbital processes present ; infra-orbital opening very small ; zygomatic arch mainly composed of the malar bone, not supported below by a process of the maxilla ; mandible with the angular portion springing from the lower edge of the bony covering of the lower incisor ; fibula separate through life ; upper lip cleft ; muffle small, naked ; nostrils comma-shaped ; tail cylindrical and hairy. [=Sciuridæ.]
- c. Incisors compressed.
- d. Limbs united by a flying expansion ; form slender ; tail long.

- e.* Dentition hypsodont, *i.e.*, molar teeth with vertically lengthened crowns. . . . **Eupetaurus**, p. 40.
- e*². Dentition brachyodont, *i.e.*, molar teeth with short crowns.
- f.* An interfemoral membrane present; tail generally bushy. . . . **Pteromys**, p. 32.
- f*². No interfemoral membrane; tail distichous.
Sciuropterus, p. 37.
- d*². Limbs free; form agile; tail long, bushy; no cheek pouches; parietals broad, anchylosed to the frontals.
Sciurus, p. 4.
- e*². Incisors not compressed; form thick-set; tail short; pollex rudimentary; parietals narrow, parallelogrammatic.
Arctomys, p. 41.
- b*². Premolars present or absent; no post-orbital processes; zygomatic arch slender, chiefly formed by the zygomatic processes of the maxillæ and squamosal bones; mandible with the angular portion springing from the lower edge of the bony covering of the lower incisor; tibia and fibula completely anchylosed in the adult; upper lip usually cleft; muffle small, naked; nostrils comma-shaped; tail cylindrical. [=Myomorpha.]
- f.* Lower incisors generally compressed; no premolars; infra-orbital opening generally high, wide above, narrow below, with the maxillary process forming a perpendicular plate; tail generally naked. [=Muridæ.]
- g.* Molars rooted.
- h.* Molars transversely laminated; incisive foramen and auditory bulla very small; palate imperforate; form myoxine; fur mixed with scattered spines; tail densely haired. . . . **Platacanthomys**, p. 46.
- h*². Incisors narrow, upper ones grooved; molars transversely laminated; auditory bulla large; hind limb elongated; tail long and hairy. **Gerbillus**, p. 46.
- h*³. Incisors not grooved; molars generally tuberculate; tail scaly, and generally more or less naked.
- j.* Only the pollex provided with a nail, all other digits clawed.
- k.* Lower incisors broad; molars of transverse

laminæ; palate narrow; muzzle blunt; form stout; tail shorter than the head and body.

Nesokia, p. 53.

*k*². Incisors narrow; molars tubercular.

Mus, p. 59.

*k*³. Like *Mus*, but with an extra anterior tubercle to the anterior upper molar.

Leggada, p. 79.

*j*². Pollex and hallux provided with a flat nail; tail very long, with a pencil of long hairs at the tip; skull very short and rounded.

l. Dentition normal; incisors narrow.

Chiropodomys, p. 81.

*l*². Molar teeth with cusps arranged perfectly regularly, those of the lower jaw arranged in transverse rows of three instead of two as in all other Muridæ; incisors broad. **Hapalomys**, p. 82.

*j*³. 1st and 5th digit of each limb with a flat nail; size small; form slender and agile

Vandeleuria, p. 82.

*h*⁴. Upper incisors grooved, otherwise as in *Mus*.

Golunda, p. 83.

*h*⁵. Upper incisors smooth; molars tuberculate; infra-orbital opening not much narrowed below, and with the perpendicular plate little developed; tail short, not scaled, sparsely haired; with large cheek-pouches.

Cricetus, p. 85.

*g*². Molars rootless or semi-rooted, composed of triangular prisms placed alternately.

m. Infra-orbital opening murine; tail short and hairy; ear-conch present; anterior palatine foramen long. . . . **Arvicola**, p. 87.

*m*². Infra-orbital opening small and sub-triangular; ear-conch absent; anterior palatine foramen rudimentary. . . . **Ellobius**, p. 94.

*f*². Incisors large and broad; no premolars; molars rooted and with re-entering enamel folds, not tuberculate; infra-orbital opening sub-triangular, with no perpendicular plate; eyes very small; ears very short; tail rather short-haired. . . . **Rhizomys**, p. 95.

- f*³. Incisors compressed; one small upper premolar; infra-orbital opening very large and rounded; metatarsal bones greatly elongated; hind-feet with five digits, of which the first and fifth do not reach the ground; tail long, cylindrical and tufted. . . **Alactaga**, p. 101.
- b*³. One premolar above and below; molars with re-entering enamel folds and semi-rooted; no post-orbital processes to frontals; mandible with the angular portion springing from the outer side of the bony covering of the lower incisor; fibula a distinct bone throughout life; muffle hairy; fur modified into spines and quills. [=Hystrioidæ.]
- n*. Spines cylindrical; tail short, covered with spines and hollow quills. . . . **Hystrix**, p. 104.
- n*². Spines flattened and channelled; tail long, scaly, with a tuft of bristles. . . . **Atherura**, p. 104.
- a*². Two pairs of incisors above; optic foramina confluent; no alisphenoid canal; bony palate much reduced; fibula and tibia ankylosed below and articulating with the calcaneum; testes always external. [=Duplicidentata.]
- o*. Two premolars above and below; frontals with no post-orbital process; ears and hind limbs short; no external tail. **Lagomys**, p. 109.
- o*². Three premolars above, two below; frontals with two wing-like processes; ears and hind limbs elongated; tail short, bushy, and recurved . . . **Lepus**, p. 112.

Genus **SCIURUS**.

Sciurus, *Linnaeus Syst. Nat.*, 12th ed., i, p. 56 (1766).

Macroxus, *Gray Ann. Mag. N. H.* (3) xx, p. 275 (1857).

The Museum collection of the squirrels of the Oriental Region is a very complete one and formed the basis of Anderson's monograph of the group in his Anatomical and Zoological Researches. In the Catalogue below Anderson has, except in one or two trifling instances, been followed, though it seems that still further reductions will have to be made in the number of species, more especially in the group of grizzled squirrels.

The synopsis or key is not intended to apply to geographical varieties of Indian species not found within the limits of the Indian empire, so that the numerous pale varieties of *Sciurus bicolor* and the curiously coloured varieties of *Sciurus ferrugineus*, which are none of them found within the limits of the Indian empire, are not included in the key.

The key is more or less an artificial one and must not be taken as exhibiting the real affinities of the different species.

Key of the Indian Species.

- a* Squirrels of large size; length without tail more than 12 inches; skull over two inches in length; the anterior upper premolar constantly absent.
 - b*. Black or dark-brown above, yellow below; outside of the shoulders and thighs, legs and feet constantly of the same colour as the back.
 - c*. Ears not tufted **S. bicolor**, p. 7.
 - c*². Ears tufted **S. giganteus**, p. 8.
 - b*². Above red and black, with a yellow occipital patch; feet yellow like the under surface; ears very fully tufted.
S. indicus, p. 10.
 - b*³. Above black or grizzled black and white, a yellow or white occipital patch; feet black, but the outside of the limbs yellow like the under surface; ears very slightly tufted.
S. macrourus, p. 11.
- a*². Squirrels of medium size, less than 12 inches in length without the tail; never dorsally striped; skull 1·6 to 1·8 inches in length; the anterior upper premolar always present.
 - d*. Dorsal surface grizzled, either gray, yellow or red and black; no ventral stripes.
 - e*. Slightly smaller skull, averaging 1·6 inch.
 - f*. With a black tip to the tail; ventral surface pale.
S. pygerythrus, p. 11.
 - f*². Tail-tip not black; ventral surface pale; a bright red patch frequently present on the thighs (seasonal?)
S. lokroides, p. 18.
 - f*³. Tail-tip not black; ventral surface bright orange; a white patch of hairs behind the ear; head with a somewhat elongated muzzle compared with *S. lokroides*. **S. lokriah**, p. 20.
 - e*². Skull somewhat larger, from 1·85 to 2·0 inches in length.
 - g*. Tail-tip black; feet yellow; below orange.
S. blanfordi, p. 12.
 - g*². Tail-tip black; feet yellow; a black lateral patch

separates the yellow ventral from the grizzled dorsal surface. . . . **S. phayrei**, p. 12.

*g*³. Below gray; during the cold weather the grizzled fur of the back is replaced by brilliant orange.

. . . . **S. caniceps**, p. 13.

*g*⁴. Below dark chestnut, generally with a patch of brilliant black on the dorsal surface; probably not seasonal. . . . **S. atrodorsalis**, p. 15.

*g*⁵. Feet, ventral surface and upper surface of the head chestnut. . . . **S. sladeni**, p. 18.

*g*⁶. Below deep chestnut, above varying from yellow grizzled to almost black; tail-tip red, black, or same colour as the back. **S. erythraeus**, p. 15.

*g*⁷. Below white, cheeks ferruginous; tail chestnut below; a white spot behind the ear; head with elongate muzzle resembling *S. lokriah*.

. . . . **S. rufigenis**, p. 21.

*d*². Ventral surface marked by five stripes, a central and two lateral nearly black, two intermediate yellowish white.

. . . . **S. quinquestriatus**, p. 21.

*d*³. Dorsal surface not grizzled; whole squirrel entirely ferruginous **S. ferrugineus**, p. 22.

*a*³. Squirrels of small size under eight inches in length without the tail; always marked with dorsal stripes varying in number; skull of varying shape and size, with the anterior pre-molar present (except *S. layardi*).

h. Median dorsal stripe black.

j. Larger, about seven inches in length without the tail; stripes barely reaching from the shoulders to the thighs, 5 black and 2 light ones; skull very long and narrow, 1.75 inches long by 1.05 inches across at the widest part. . . . **S. berdmorei**, p. 26.

*j*². Smaller, about five inches in length without the tail; ears tufted with white tips; stripes varying in length and distinctness; skull very short and rounded, 1.05 long by .85 across the broadest part.

. . . . **S. maclellandi**, p. 27.

*h*². Median dorsal stripe white or yellow.

k. Rump and under side of the tail with a distinct tinge of red.

1. Three white or reddish stripes reaching anteriorly as far as the shoulders only; ventral surface pale except the rump; skull long and narrow, 1.25 by .85 inches. . . . **S. tristriatus**, p. 25.
- 1². Lateral stripes very obscure; ventral surface chestnut; no anterior upper premolars; skull short and rounded, 1.3 by .95 inches. . . . **S. layardi**, p. 26.
- 1². Rump and under side of the tail with no traces of red.
- m. Three dorsal stripes well marked, reaching forward anteriorly to the nape; body about seven inches; fur harsh and light coloured.
S. palmarum, p. 24.
- m². Three dorsal stripes very obscure, not reaching forward anteriorly to the nape of the neck; body about five inches in length; fur very soft and rather dark . . . **S. sublineatus**, p. 26.

Sciurus bicolor.

Var. A.—typicus.

- Sciurus bicolor*, *Sparrman Götheborg Wetensk. Svensk. Handl.*, i, p. 70 (1778)*; *Horsfield Zool. Res., with plate*; *Müller and Schlegel Tem. Verhandl.*, pp. 85, 88; *Blyth J. A. S. B.*, x, p. 919; *Cantor J. A. S. B.*, xv, p. 246; *Blyth J. A. S. B.*, xvi, p. 870; *Blyth Cat.*, no. 309, p. 99 [pt.]; *Anderson Anat. Zool. Res.*, p. 215; *Fentink Notes Leyd. Mus.*, v, p. 108; *Thomas P. Z. S.*, 1886, pp. 67, 75; *Anderson, J. Linn. Soc.*, xxi, p. 340; *Fentink Notes Leyd. Mus.*, xi, p. 27.
- Sciurus javensis*, *Zimmerman Geograph. Gesch.*, ii, p. 342 (1780); *Blyth J. A. S. B.*, xvi, p. 870; *Gray P. Z. S.*, 1861, p. 137.
- Sciurus albiceps*, *Desmarest N. Dict. Hist. Nat.*, x, p. 105 (1817); *Fentink Notes Leyd. Mus.*, v, p. 110.
- Sciurus leschenaltii*, *Desmarest Mamm.*, p. 335 (1820); *Horsfield Zool. Res.*
- Sciurus affinis*, *Raffles Linn. Trans.*, xiii, p. 259 (1822); *Blyth Ann. Mag. N. H.*, xx, p. 314.
- Sciurus hypoleucus*, *Horsfield Zool. Res.* (1824); *Müller and Schlegel Tem. Verhandl.*, p. 90; *Blyth J. A. S. B.*, xvi, p. 870; *id. Cat.*, no. 310, p. 99.
- Sciurus auriventer*, *Is. Geoff. St. Hil. Mag. de Zool.* (1832)*; *id. Zool. Voy. aux. Ind. Orient. Belanger*, 1834, p. 150; *Blyth J. A. S. B.*, xvi, p. 870.
- Sciurus humeralis*, *Colon Mem. Soc. Sci. Nat. Neufcha.*, i, p. 122, pl. viii (1835).
- Sciurus ephippium*, *Müller and Schlegel Tem. Verhandl.*, p. 91, pl. xiii (1838-44); *Blyth Cat.*, no. 311, p. 100.
- Sciurus rubiventer*, *Müller and Schlegel Tem. Verhandl.*, p. 86 (1838-44).
- Macroxus bicolor*, *Gray Ann. Mag. N. H.* (3), xx, p. 276 (1867) [pt.]
- Macroxus ephippium*, *Gray Ann. Mag., N. H.* (3), xx, p. 276 (1867).

Var. B.—giganteus.

Sciurus giganteus, McClelland *P. Z. S.*, p. 150 (1839); *Anderson Anat. Zool. Res.*, p. 220; *Jentink Notes Leyd. Mus.*, v, p. 107.
Sciurus bicolor, *Wagner Schreber Säugeth. Suppl.*, iii, p. 191 (1843); *Blyth J. A. S. B.*, xvi, p. 870; id. *ibid.*, xxiv, p. 472; id. *ibid.*, xxxi, p. 334; *Blyth Cat.*, p. 99, no. 309. [pt.]
Sciurus macruroides, *Hodgson J. A. S. B.*, x, p. 915 (1841); *Horsfield P. Z. S.*, 1856, p. 402; *Ferdon Mamm.*, p. 168; *Blyth J. A. S. B.*, xlv, *Burma List*, p. 35.

The Black Hill Squirrel; Bhotea, Shingsham; Lepcha, Lehyuk; Arakan, Leng-thet; Burmese, Sheng.

Distribution.—The typical variety is found in Lower Burma, all through Tenasserim and the Malayan peninsula, and in the islands of Sumatra, Java and Borneo.

The variety *giganteus* is found in the Himalayas from Nepal eastward to Assam, the hills between Assam and Burma and Upper Burma.

This species varies in colour to a large extent, a fact which has been the cause of the long list of synonyms above recorded; in the list of specimens below, "a" to "l" inclusive are specimens of the typical black and yellow variety, in which the black extends down the outside of the legs and the toes are black, the ears are untufted and there is a cheek and chin spot.

The specimens "m" to "q" only differ in having the back of a decidedly more rufous tinge.

The specimens "s" to "z" differ in having the feet light-coloured, not black as in the typical form; the back varies from a light rufous to the same yellow as the ventral surface; this is the variety separated by Jentink under the name of *Sciurus albiceps*.

The specimen "r" is again curiously intermediate: from the crown of the head to the root of the tail it is a bright grizzled yellow, each hair being brown, with a bright yellow tip; the head, cheeks and throat are whitish, the end of the nose and chin alone being dark; the tail and feet are almost as dark as in the typical black and yellow variety.

The two specimens from Borneo "z" and "a²" are somewhat different again, being very dark grizzled above, but with yellowish not blackish feet.

It seems impossible therefore at present to separate into even geographical races this very varying species, except in the case of the large squirrel of the Eastern Himalayas and Assam, which forms a well-marked geographical race of *Sciurus bicolor*. It was first described by McClelland as a distinct species (*S. giganteus*) in his paper on the Mammals of Assam.

This race is at once distinguished from the true *S. bicolor* by its tufted ears; it also seems to be very constant in colour, and never varies as *S. bicolor* does.

Var. A.—typicus.

a. Skin, skull	Yé, Tenasserim, 11-86	G. M. Giles.
b. Skin	♀ Pilai, Mergui, 6-3-82	J. Anderson.
c. Skin	♂ " " 7-3-82	J. Anderson.
d. Skin	Thaing, Mergui, 31-1-82	J. Anderson.
e. Skin, skull	♂ Mergui, 14-12-82	J. Anderson.
f. Skin	Amherst, Tenasserim	J. Armstrong.
g. Skin	" "	J. Armstrong.
h. Skin, skull	.....	Purchased, 1877.
i. Skin, skull	.....	Purchased, 1878.
k. Stuffed	.....	No history, A.S.B.
l. Stuffed skull	♂ Malay peninsula	W. Rutledge, 1870.
m. Skin, skull	Tenasserim	A.S.B.
n. Stuffed juv.	"	Major Berdmore, A.S.B.
o. Stuffed, skull	Pegu	W. T. Blanford, 1863, A.S.B.
p. Stuffed	Ramree Isle, Arrakan	J. R. Abbott, 1844, A.S.B.
q. Stuffed skull	Tenasserim	F. Jenkins, 1845, A.S.B.
r. Skin	♂ Taping R., Perak	Mus. Coll. (Jaffa), 1889.
s. Skin	Malacca	E. R. Alston [P.]
t. Stuffed skull	♀ Singapore	W. Rutledge, 1872.
u. Stuffed skull	Malay peninsula	E. Lindstedt, 1846, A.S.B.
v. Stuffed skull	"	R. W. G. Frith, 1846, A.S.B.
w. Stuffed skull	Java	Mrs. Turnbull, 1857, A.S.B.
x. Skin	Java [Horsfield]	India Mus., London.,
y. Stuffed skull	♀ Borneo	Batavian Soc. (1844) A.S.B.
z. Skin	"	E. R. Alston [P.]
a ² . Skin	"	E. R. Alston [P.]
b ² . Skeleton	Tenasserim	J. Wood Mason.

Var. B.—giganteus.

a-h. 8 Skins and skulls	Sikkim	L. Mandelli.
j. Skin	Sikkim	L. Mandelli.
k. Skin	♂ nr. Darjeeling, 6000 ft.	W. G. Masson [P.]
l. Skin	♀ " " "	W. G. Masson [P.]
m. Skin	Sikkim	H. J. Elwes [Ex.]
n. Skin, skull	Darjeeling terai, 4-69	J. Anderson.
o. Skin	Sikkim	W. T. Blanford
p. Skin	Assam	E. F. Smith (1859), A.S.B.
q. Skin	Garohills, 7-69	J. Anderson.
r-v. 5 Skins and skulls.	Samagooting, Assam	J. Butler.
w. Skin	Naga hills, Assam,	A. W. Chennell.
x. Skin	" " "	A. W. Chennell.
y. Skin	Telbongo Peak, Naga hills,	H. H. Godwin Austen.
z. Skin	Dunsiri Valley, Assam	H. H. Godwin Austen.
a ² . Skin	" " "	H. H. Godwin Austen.
b ² . Skin	Dirjung R., N. Cachar,	H. H. Godwin Austen.
c ² . Skin	Sibsagar, Assam, 7-68	S. E. Peel.
d ² . Skin	" " 7-68	S. E. Peel.
e ² . Skin	juv. Goalpara, Assam, 8-68	H. L. Haughton.
f ² . Skin	Momein, Yunnan, 6,000 ft., 21-5-68.	J. Anderson.
g ² . Skin	" " 7-68,	J. Anderson.

<i>h</i> ² . Skin	Upper Burma	C. Williams (1865).
<i>j</i> ² . Skin, skull	? Borneo	E. R. Alston [P.]
<i>k</i> ² . Skin, skull	.....	W. Rutledge.
<i>l</i> ² . Stuffed	Darjeeling	Capt. Bonnavia (1844), A.S.B.
<i>m</i> ² . Skull	Sibsagar, Assam, 7-68	S. E. Peel.
<i>n</i> ² . Skull	Samagooting, Assam, 10-75.	J. . Butler.
<i>o</i> ² . Skull		No history, A. S. B.
<i>p</i> ² . Skin	♂ Darjeeling, 8,000 ft.	W. G. Masson [P.]
<i>q</i> ² . Skin	"	W. A. Darling (1881)
<i>r</i> ² . Skin	Rungbee, Darjeeling	J. Munro.

Sciurus indicus.

"Bombay Squirrel," *Pennant Synop. Mamm.*, 1771, p. 281.

Sciurus indicus, *Erxleben Syst. Reg. Anim.*, p. 420 (1777); *Anderson Anat. Zool. Res.*, p. 222; *Fentink Notes Leyd. Mus.*, v, p. 106; *Thomas P. Z. S.*, 1886, p. 60.

Sciurus bombayanus, *Boddaert Elench. Anim.*, p. 117 (1785)*.

Sciurus maximus, *Gmelin Syst. Nat.*, i, p. 149 (1788); *Elliot, Madr. Journ.*, x, p. 217; *Horsfield Cat. E. I. Mus.*, p. 156; *Blyth J. A. S. B.*, xxviii, p. 287; *id. Cat.*, p. 98, no. 307; *Ferdon Mamm.*, p. 166; *McMaster Notes on Ferdon*, pp. 49, 194; *Anderson Anat. Zool. Res.*, p. 223.

Sciurus purpureus, *Zimmerman Spec. Geogr. Quadr.*, p. 518 (1788); *Blyth J. A. S. B.*, xvi, p. 868.

Sciurus elphinstonii, *Sykes, P. Z. S.*, p. 103 (1831); *Horsfield Cat. E. I. Mus.*, p. 157; *Ferdon Mamm.*, p. 167.

Sciurus malabaricus, *Schinz Synop. Mamm.*, ii, p. 32 (1845); *Ferdon Mamm.*, p. 166.

The Indian Red Squirrel; Bengali, Kat beral; Hindustani, Jungli gilheri; Kols, Kondeng; Gonds, Perwarsti; Hindi, Karrat; Monghyr, Rasu or Ratuphar; Telegu, Bet-údatá; Mahratta, Shekra; Canarese, Kesannalu.

Distribution.—The Indian peninsula generally, south of the Gangetic plains from Cuttack to Travancore; has also been recorded from the Nepal Terai (Hodgson) and Manipur (Thomas).

<i>a</i> . Skin,	♂ nr. Cuttack	V. Ball [Ex.]
<i>b</i> . Skin	Travancore	Purchased.
<i>c</i> . Skin, skull	S. Malabar	Rev. J. Baker (1859), A.S.B.
<i>d</i> . Skin	"	Rev. J. Baker (1859), A.S.B.
<i>e</i> . Skin	Malabar	E. R. Alston [P.]
<i>f</i> . Skin	Travancore	Purchased.
<i>g</i> . Skin	Deccan [Sykes]	India Mus., London.
<i>h</i> . Skin, skull ♀		No history, A. S. B.
<i>j</i> . Skin, skull		No history A. S. B.
<i>k</i> . Skin	.....	J. Anderson.
<i>l</i> . Skin	.....	J. Anderson.
<i>m</i> . Skin	.....	Lord Northbrook.
<i>n-q</i> . 4 Skins	♂	W. Rutledge.
<i>r</i> . Skin	♀	W. Rutledge.

s. Stuffed	S. Malabar	Mrs. Turnbull, 1862, A.S.B.
t. Stuffed, skull	.....	A.S.B.
u. Stuffed	.....	Barrackpore Menagerie,
v. Stuffed, skull	.....	A.S.B. [A.S.B.]
w. Stuffed	.....	G. Sceva.
x. Stuffed	.....	W. Rutledge, 1870.
y. Skeleton, mtd.	.....	No history.
z. Skin	♂ Tenmalai, S. Arcot,	Museum Collector.
a ² . Skin	♀ " " "	Museum Collector.
b ² . Skin	♀ Calathorpulay, Travancore.	Museum Collector.

Sciurus macrourus.

Sciurus macrourus, *Pennant Indian Zool.*, 1st ed., p. 31, pl. i (1769)*; *Gray Illustr. Ind. Zool.*, ii, pl. xix; *Blyth J. A. S. B.*, xvi, p. 869; id. *J. A. S. B.*, xviii, p. 601; id. *J. A. S. B.*, xx, p. 165; *Horsfield Cat. E. I. Mus.*, p. 158; *Kelaart Prodr. Faun. Zeylan.*, p. 49; *Blyth J. A. S. B.*, xxiii, p. 214; id. *Cat.*, no. 313, p. 100; *Ferdon Mamm.*, p. 168; *Anderson Anat. Zool. Res.*, p. 224.

Sciurus ceylonicus, *Erxleben Syst. Reg. An.*, p. 416 (1777).

Sciurus ceilonensis, *Boddaert Elench. Anim.*, p. 117 (1785)*.

Sciurus maximus, *Wagner Schreber Säugeth. Suppl.*, iii, p. 188 (1843) [pt.]

Sciurus bicolor, *apud. Schinz Syn. Mamm.*, ii, p. 33 (1845).

Sciurus tennentii, *Blyth J. A. S. B.*, xviii, p. 600 (1849); id. *J. A. S. B.*, xx, p. 165; *Kelaart Prodr. Faun. Zeylan.*, p. 50; *Blyth Cat.*, no. 312, p. 100.

Sciurus albipes, *Blyth J. A. S. B.*, xxviii, p. 287 (1859); *Blyth Cat.*, no. 314, p. 100.

Sciurus zeylanicus, *Ray apud Fentink Notes Leyd. Mus.*, v, p. 113 (1883).

The Grizzled Squirrel; Cingalese, Rookeeah or Dandoleyna.

Distribution.—The hill ranges of Southern India, Nilgiris, Shevaroy, and Ghauts of Travancore and Ceylon.

a. Skin	♂ Shevaroy hills	W. Daly 1889.
b. Skin	Nilgiris	R. Rollo, 1845, A.S.B.
c. Skin	Ceylon	Columbo Mus.
e. Stuffed, skull	"	E. F. Kelaart, A.S.B.
f. Stuffed, skull	"	E. F. Kelaart, A.S.B.

[2 types of *Sciurus tennentii*, Blyth.]

g. Stuffed	Ceylon	E. L. Layard, 1848, A.S.B.
h. Stuffed	"	E. L. Layard, 1848, A.S.B.
j. Stuffed	"	E. L. Layard, 1848, A.S.B.
k. Stuffed, juv.	"	E. L. Layard, 1848, A.S.B.
l. Stuffed	"	E. F. Kelaart, A.S.B.
m. Skull	"	R. Templeton, 1846, A.S.B.
n. Skin	♂ "	Zoological Gardens.

Sciurus pygerythrus.

Var. A.—typicus.

Sciurus pygerythrus, *Is. Geoff. St. Hil. Mag. de Zool.* (1832)*; id. *Zool. Voy. aux Ind. Orient.*, *Bélangier*, p. 145, pl. vii (1845); *Blyth J. A. S. B.*

xvi, p. 872 (note); id. *J. A. S. B.*, xvii, p. 345; id. *J. A. S. B.*, xxiv, p. 475; *Blyth Cat.*, no. 325, p. 103; *Blyth J. A. S. B.*, xlv, *Burma List*, p. 37; *Anderson Anat. Zool. Res.*, p. 227; *Fentink Notes Leyd. Mus.*, v, p. 124.

Sciurus flavimanus, *Schinz Synop. Mamm.*, ii, p. 34 (1845) [pt.]

Sciurus caniceps pygerythrus, *Thomas P. Z. S.*, p. 69 (1886).

Var. B.—blanfordi.

Sciurus blanfordi, *Blyth J. A. S. B.*, xxxi, p. 333 (1862); id. *J. A. S. B.*, xxxii, p. 73; id. *Cat.*, no. 331, p. 104; id. *J. A. S. B.*, xlv, *Burma List*, p. 36; *Anderson Anat. Zool. Res.*, p. 230, pl. xviii.

Var. C.—phayrei.

Sciurus pygerythrus var., *Blyth J. A. S. B.*, xvii, pt. 2, p. 345 (1848).

Sciurus phayrei, *Blyth J. A. S. B.*, xxiv, pp. 472, 476 (1885); id. *J. A. S. B.*, xxviii, p. 275; id. *J. A. S. B.*, xxxi, p. 332; id. *Cat.*, no. 330, p. 104; *Peters P. Z. S.*, 1866, p. 429; *Blyth J. A. S. B.*, xlv, *Burma List*, p. 36; *Blanford J. A. S. B.*, xlvii, p. 160; *Anderson Anat. Zool. Res.*, p. 230.

Sciurus caniceps phayrei, *Thomas P. Z. S.*, p. 69 (1886).

Var. D.—griseimanus.

Sciurus griseimanus, *A. Milne Edwards Rev. Mag. Zool.* (2), xix, p. 195 (1867); id. *Rech. Mamm.*, p. 164; *Anderson Anat. Zool. Res.*, p. 233.

Sciurus inornatus } *Gray Ann. Mag. N. H.* (3), xx, p. 282 (1867).

Sciurus leucopus }

Sciurus caniceps griseimanus, *Thomas P. Z. S.*, p. 69 (1886).

Distribution.—The typical variety is found in Lower Burma and is apparently confined to the country round Rangoon and the Pegu revenue division; it is replaced in Upper Burma by two varieties, one distinguished by its very pale yellow ventral surface, which has never been named, and the other by its larger size, and its ventral surface of the same bright red as the typical variety (*S. blanfordi*); in Siam and Cambodia a third form is found of the same size as *S. blanfordi* but with a pale yellow ventral surface and markedly pale feet (*S. griseimanus*); a fourth form (*S. phayrei*) distinguished by the possession of a lateral black streak between the grizzled dorsal and yellow ventral surfaces is confined to the country between the Sittang and Salween apparently rivers in the Tenasserim division of Lower Burma.

Var. A.—typicus.

a. Skin, skull	Burma	C. Williams (1865).
b. Skin	"	C. Williams (1865).
c. Skin	Rangoon	Sir J. Fayrer (1857), A.S.B.
d. Skin	"	Sir A. Phayre, A.S.B.
e. Skin	♂	J. Armstrong.
f. Skin	"	J. Armstrong.

g. Skin		Rangoon,	9-1-76.	J. Armstrong.
h. Skin	♂	"	"	J. Armstrong.
j. Stuffed		Lower Pegu		Major Berdmore (1847), A.S.B.
k. Stuffed		" "		Sir J. Fayrer (1857) A.S.B.
l. Skin		Upper Burma.		C. Williams (1865).
m. Skin, skull	♂	Sagaing, Upper Burma,	3-10-68.	J. Anderson.
n. Skin	juv.	" "	"	J. Anderson.
			3-10-68.	
o. Skin	♀	" "	"	J. Anderson.
			3-10-68.	
p. Skin	♂	Ava, Upper Burma.	4-10-68.	J. Anderson.
q. Skin	♀	" "	"	J. Anderson.
			4-10-68.	
r. Skin, skele- ton	♀	Kabwet, Upper Burma,	9-1-75.	J. Anderson.
s. Alc.	juv.	Mandalay		Sir P. Sladen, 1869.

Var. B.—blanfordi.

a. Stuffed, skull	Ava.	W. T. Blanford (1862), A.S.B.
	[Type of <i>S. blanfordi</i> of Blyth.]	
b. Skin	♀	Pudeepyo, Upper Burma, J. Anderson.
Skeleton		10-1-75.

Var. C.—phayrei.

a. Skin, skull	Martaban	E. Blyth (1861), A.S.B.
b. Stuffed, skull	"	E. Blyth (1861), A.S.B.
c. Stuffed	"	E. Blyth (1861), A.S.B.
d. Skull	.....	No history, A.S.B.
e. Skeleton	Upper Burma.	J. Anderson.

Var. D.—griseimanus.

a. Skin, skull	♂	Cochin China	Paris Mus. [Ex.]
		[Jullien 1874].	
b. Skin		Cochin China, 8-67.	Paris Mus. [Ex.].

Sciurus caniceps.

Sciurus — ? *Blyth* *ſ. A. S. B.*, x., p. 920 (1841).

Sciurus caniceps, *Gray Ann. Mag. N. H.*, x, p. 263 (1842); *Horsfield Cat. E. I. Mus.*, p. 155; *Blyth* *ſ. A. S. B.*, xlv, *Burma List*, p. 36; *Blanford* *ſ. A. S. B.*, xlvii, p. 161; *Anderson Anat. Zool. Res.*, p. 229; *Jentink Notes Leyd. Mus.*, v, p. 122; *Thomas P. Z. S.*, 1886, p. 68; *Anderson* *ſ. Linn. Soc.*, xxi, p. 340.

Sciurus chrysonotus, *Blyth* *ſ. A. S. B.*, xvi., p. 873 (1847); *Horsfield Cat. E. I. Mus.*, p. 159; *Blyth* *ſ. A. S. B.*, xxiv, p. 474; *id.* *ſ. A. S. B.*, xxxi, p. 334; *id. Cat.*, no. 323, p. 103; *Peters P. Z. S.*, 1866, p. 429; *Blanford Ann. Mag. N. H.* (4), i, p. 152.

Sciurus concolor, *Blyth* *J. A. S. B.*, xxiv, p. 474 (1855); *id. J. A. S. B.*, xx, p. 166; *id. Cat.*, no. 324, p. 103.

Macroxus caniceps, *Gray Ann. Mag. N. H.* (3), xx, p. 280 (1867).

Distribution:—Tenasserim, from the Moulmein district in the north through the Malay peninsula to Malacca.

This species, like the other Burma squirrels, varies considerably; the specimens from about Moulmein, whence came the original type of *Sciurus chrysonotus*, have the back suffused with bright orange yellow during the breeding season, which takes place during the cold months from October to February; the specimens from Mergui further south do not seem to undergo a seasonal change, but have the sides of the neck instead of the back tinged with bright yellow; further south still the specimens from Perak have only a slight tinge of orange on the back and no cheek patches, and this form agrees very well with the specimen from Malacca, the type of *S. concolor*.

a. Skin, skull	♀	Moulmein dist.	T. H. Hood.
b. Skin		" "	T. H. Hood.
c. Skin		" "	T. H. Hood.
d. Skin	♂	" "	T. H. Hood.
e. Skin		" "	T. H. Hood.
f. Skin		" "	T. H. Hood.
g. Skin	♀	" "	T. H. Hood.
h. Skin		" "	T. H. Hood.
j. Skin		" "	T. H. Hood.
k. Skin		Mergui	Major Berdmore (1854), A S.B.
l. Skin		Lampée, Mergui, 10-1-82	J. Anderson.
m. Skin	♀	Pilai, Mergui, 7-3-82	J. Anderson.
n. Skin	♀	Tiboo Padan, Mergui, 8-2-82	J. Anderson.
o. Skin	♀	Pilai, Mergui, 6-3-82	J. Anderson.
p. Skin	♀	Pilai, " 7-3-82	J. Anderson.
q. Skin	♀	Mergui, 23-3-82	J. Anderson.
r. Skin	♀	" 13-12-81	J. Anderson.
s. Skin, skull	♂	" 13-12-81	J. Anderson.
t. Skin "		" 14-10-81	J. Anderson.
u. Skin		Perak	Mus. Coll., Jaffa (1889).
v. Skin		"	Mus. Coll., Jaffa (1889)
w. Skin, skull.		Malacca	G. Moxon (1847), A.S.B.

[Type of *S. concolor* of Blyth.]

x. Skin	No history	A.S.B.
y. Stuffed	Amherst, Tenasserim	J. Armstrong (1877)
z. Stuffed, skull.	" "	J. Armstrong (1877).
a ² . Stuffed	Tenasserim	E. O'Reilly (1850), A.S.B.
b ² . Stuffed	"	E. O'Reilly (1850), A.S.B.
c ² . Stuffed	"	Rev. J. Barbe (1846), A.S.B.
d ² . Stuffed	"	Rev. J. Barbe, (1846), A.S.B.

[The above four specimens were the types of *S. chrysonotus*, Blyth.]

e ² .-f ² . 2 Alc.	Moulmein dist.	T. H. Hood (1872)
g ² .-k ² . 4 Alc.	Moulmein	J. Wood Mason.

Sciurus atrodorsalis.

- ♂ *Sciurus flavimanus*, *Is. Geoff. St. Hil. Mag. de Zool.* (1832)*; id. *Zool. Voy. aux Ind. Orient.* *Bélanger*, p. 148; *Blyth* *J. A. S. B.*, xvi, p. 872.
- Sciurus atrodorsalis*, *Gray Ann. Mag. N. H.*, x, p. 263 (1842); *Blyth* *J. A. S. B.*, xvi, p. 872; id. *J. A. S. B.*, xvii, p. 345; id. *J. A. S. B.*, xviii, p. 602; *Horsfield Cat. E. I. Mus.*, p. 154; *Blyth* *J. A. S. B.*, xxiv, p. 477; id. *J. A. S. B.*, xxviii, p. 276; id. *J. A. S. B.*, xxxi, p. 333; id. *Cat.* no. 334, p. 105; *Peters P. Z. S.*, 1866, p. 428; *Blanford Ann. Mag. N. H.* (4), i, p. 152; *Blyth* *J. A. S. B.*, xlv, *Burma List*, p. 36; *Blanford, J. A. S. B.*, xlvii, p. 159; *Anderson Anat. Zool. Res.*, p. 233; *Fentink Notes Leyd., Mus.*, v, p. 122 (pt.); *Thomas P. Z. S.*, 1886, p. 70.
- Sciurus hyperythrus*, *Blyth* *J. A. S. B.*, xxiv, p. 474 (1855); id. *J. A. S. B.*, xxxi, p. 333; id. *Cat.*, no. 321, p. 102.

Distribution.—This squirrel has only been found in North Tenasserim, and apparently only to the east of the Salween river; the localities given in the list below "Lower Pegu" and "east of the Irrawaddy river" are somewhat vague and do not seem to be quite reliable.

<i>a-e</i> . 5 Skins	South of Irrawaddy	T. H. Hood and Mus. Coll.
<i>f-l</i> . 6 Skins	Moulmein dist.	T. H. Hood.
<i>m-n</i> . 2 Skins ♂	" "	T. H. Hood.
<i>o-p</i> . 2 Skins ♀	" "	T. H. Hood.
<i>q-a²</i> . 11 Skins	" "	T. H. Hood.
<i>b²</i> . Skin	" "	T. H. Hood.
<i>c²</i> . Skin	" "	J. Armstrong.
<i>d²</i> . Skin	Mooleyet range, Tenasserim.	Purchased.
<i>e²</i> . Skin	" " "	Purchased.
<i>f²</i> . Skin	" " "	J. Anderson (1870).
<i>g²</i> . Stuffed	Moulmein	S. R. Tickell, A. S. B.
<i>h²</i> . Stuffed	"	W. S. Atkinson, A. S. B.
<i>j²</i> . Stuffed	"	W. S. Atkinson, A. S. B.
<i>k²</i> . Stuffed	"	J. Armstrong.
<i>l²-n²</i> . 3 Stuffed	Lower Pegu.	J. Armstrong.
<i>o²</i> . Stuffed	Tenasserim.	Major Berdmore (1852), A. S. B.

[Type of *S. hyperythrus*, Blyth.]

<i>p²-r²</i> . 3 Skeletons, skins	♂ Moulmein dist.	T. H. Hood.
<i>s²-v²</i> . 4 Skeletons, skins	♀ "	T. H. Hood.
<i>w²</i> . Skeleton, skin	"	T. H. Hood.
<i>x²-y²</i> . 2 Alc.	East of Irrawaddy	T. H. Hood.
<i>z²</i> . Stuffed	Moulmein	W. S. Atkinson, A. S. B.
<i>a³-b³</i> . 2 Alc.		No history.

Sciurus erythræus.

- Sciurus erythræus*, *Pallas Nov. Sp. Quad. e Glir.* p. 377 (1778); *Blyth, J. A. S. B.*, xvi, p. 872; id., *J. A. S. B.*, xxiv, p. 473; id. *Cat.*, no. 318, p. 102;

- Anderson Anat. Zool. Res.*, p. 236; *Fentink Notes Leyd. Mus.*, v. p. 119; *Thomas P. Z. S.*, 1886, p. 61.
Sciurus hippurus, *apud McClelland and Horsfield P. Z. S.*, p. 151 (1839); *Horsfield Cat. E. I. Mus.*, p. 154.
Sciurus erythrogaster, *Blyth J. A. S. B.*, xi, p. 970 (1842); *id. J. A. S. B.*, xvi, p. 871; *id. J. A. S. B.*, xxiv, p. 473; *id. Cat.*, no. 320, p. 102.
Macroxus erythrogaster, *Gray Ann. Mag. N. H.* (3), xx, p. 283 (1867) [pt.]
Macroxus punctatissimus, *Gray Ann. Mag. N. H.* (3), xx, p. 283 (1867).
Sciurus gordonii, *Anderson P. Z. S.*, p. 140 (1871); *Blyth J. A. S. B.*, xliv, *Burma List*, p. 37; *Anderson Anat. Zool. Res.*, p. 240, pl. xix.

Distribution.—Assam from the Garo hills eastwards, Cachar, Manipur, and Upper Burma.

This species, like the other grizzled squirrels, is an exceedingly variable one, so that it is difficult to say whether it should be treated as a single or as several species; the form in the Garo hills is distinguished at once by its bright red tail of the same colour as the ventral surface (*S. erythræus* Pallas *apud* Blyth) in the list of specimens "a" to "h" and "z²." Eastwards in the Naga hills and about Samagooting the red tail-tip becomes black, specimens "j" to "u" in the list; southward a little in Cachar and Manipur the whole dorsal surface becomes very much darker, so that the extreme forms are almost black, this form was named *S. erythrogaster* by Blyth and *Macroxus punctatissimus* by Gray, the specimens are lettered from "v" to "a²"; in Assam proper, the valley of the Brahmapootra, the original Garo hill form is found without any trace of the black tail at all, specimens "b²" to "g²"; finally, in Upper Burma a form is found resembling the Assam variety, but distinguished by generally possessing a narrow median line of the same colour as the back running between the bright chestnut of the rest of the ventral surface; this was described by Anderson as a distinct species under the name of *S. gordonii*, and is represented in the list by specimens lettered "h²" to "r²." As in several of the Assam specimens there are traces of this ventral line, there does not seem to be any reason why *S. gordonii* should remain distinct.

a-b.	2 Skins, ♂	Garo hills.	J. Anderson.
	& skulls.		
c.	Skin ♂	" "	H. H. Godwin Austen.
d.	Skin ♂	Dorengo, Garo hills.	Museum Collector.
e-f.	2 Skins	.....	A. W. Chennell.
g-h.	2 Stuffed	Cherrapoonjee, Khasia hills	F. Skipwith (1857), A.S.B.
j-m.	4 Skins, 1 skull.	East Naga hills, 4-8-75.	H. H. Godwin Austen.
n.	Skin, skull	Dimapur, Naga hills, 19-4-	H. H. Godwin Austen.
	♂	75.	
o-p.	2 Skins		H. H. Godwin Austen.
	♀ ♂	
q.	Skin	Samagooting, Assam.	J. Butler.
r-u.	4 Skins,	Naga hills.	A. W. Chennell.
	3 ♂ 1 ♀		

v. Skin	Assam	A. W. Chennell.
w. Skin, ♂ skull.	"	A. W. Chennell.
x-y. 2 Skins, ♂ 1 skull.	Sylhet	Zoological Gardens.
z. Skin	Chittagong	J. M. Lister.
a ² . Stuffed	Manipur	C. S. Guthrie (1842), A. S. B.

[Type of *S. erythrogaster* of Blyth].

b ² -c ² . 2 Skins ♂	Dikrang, Assam	H. H. Godwin Austen.
d ² . Skin	Toruputu, Duffla hills	H. H. Godwin Austen.
e ² . Skin	"	H. H. Godwin Austen.
f ² -g ² . 2 Skins, 2 skulls	Assam	F. Day [P.], 1876.
h ² . Skin ♀	Bhamo Burma, 23-2-68	J. Anderson.
j ² . k ² . 2 Stuffed	" " 24-2-68	J. Anderson.
l ² . Skin ♂	Sagaing, Burma, 4-10-68	J. Anderson.

[Four last are types of *S. gordonii* of Anderson.]

m ² -o ² . 3 Skins, ♀ 3 skulls	Bhamo, Burma, 3-3-75	J. Anderson.
p ² . Skin, ♂ ♀ skeleton.	Sawaddy, Burma, 31-1-75.	J. Anderson.
q ² -r ² . 2 Skins ♂ and skulls.	2nd Defile, Irrawad- dy, 5-3-75.	J. Anderson.
s ² . Skeleton ♀	Bhamo, Burma	J. Anderson.
t ² . Skeleton	East Naga hills	H. H. Godwin Austen.
u ² -v ² . 2 Skulls	Upper Burma	J. Anderson.
w ² . Skeleton	Naga hills	H. H. Godwin Austen.
x ² -y ² . 2 Stuffed juv.	Assam	F. Jenkins (1847), A.S.B.
z ² -2. Skin	Shillong	T. la Touche.

Sciurus castaneoventris.

Sciurus castaneoventris, *Gray Ann. Mag. N. H.*, x, p. 263 (1842); *Blyth J. A. S. B.*, xxix, p. 90; id. *Cat. Mam.*, no. 322, p. 102; *Swinhoe P. Z. S.*, 1870, pp. 231, 633; *Anderson Anat. Zool. Res.*, p. 238; *Jentink Notes Leyd. Mus.*, v, p. 123.

Sciurus griseopectus, *Blyth J. A. S. B.*, xvi, p. 873 (1847); id. *J. A. S. B.*, xxiv, p. 474; *Swinhoe P. Z. S.*, 1870, p. 634; id. *P. Z. S.*, 1872, p. 818. *Sciurus erythræus*, *apud Swinhoe P. Z. S.*, p. 357 (1862).

Distribution.—Western China and the islands of Formosa and Hainan.

This form does not seem in any way separable from *S. erythræus*; it more especially resembles the Assam variety of the preceding species.

a. Stuffed	China	Rajah R. Mullick (1847), A.S.B.
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[Type of *S. griseopectus* of Blyth.]

b. Stuffed, skull	Amoy, China.	R. Swinhoe (1860), A.S.B.
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Sciurus sladeni.

Sciurus sladeni, *Anderson P. Z. S.*, p. 139 (1871); *Blyth J. A. S. B.*, xlv, *Burma List*, p. 37; *Anderson Anat. Zool. Res.*, p. 242, pl. xx.
Sciurus atrodorsalis, *apud Jentink Notes Leyd. Mus.*, v, p. 122 (1883).

Distribution.—Upper Burma; the type was from Thigyain, a town on the Irrawaddy between Mandalay and Bhamo.

a. Stuffed, skull Thigyain, Upper Burma, J. Anderson.
 18-1-68.

[Type of *S. sladeni*, Anderson.]

b. Stuffed Thigyain, Upper Burma J. Anderson.
 c-d. 2 Stuffed Upper Burma C. Williams (1864), A.S.B.
 e. Skull Thigyain, Upper Burma, J. Anderson.
 18-1-68.

Sciurus hippurus.

Sciurus hippurus, *Is. Geof. St. Hil. Etud. Zool.*, i, no. 6, pl. vi (1832)*; *id. Zool. Voy. aux Indes orient. Bélanger*, p. 149 (1834); *Müller and Schlegel Tem. Verhandl.*, p. 92; *Cantor J. A. S. B.*, xv, p. 249 [pt.]; *Blyth J. A. S. B.*, xvi, p. 871; *id.*, *J. A. S. B.*, xxiv, p. 473; *id. Cat.*, no. 319, p. 102; *Anderson Anat. Zool. Res.*, p. 241; *Jentink Notes Leyd. Mus.*, v, p. 118; *Thomas P. Z. S.*, 1886, p. 76.

Sciurus rufogaster, *Gray Ann. Mag. N. H.*, x, p. 263 (1842).

Distribution.—The Malay peninsula from Klang southwards, Sumatra, Java and Borneo; Müller and Schlegel also give Canton, but this is probably a mistake.

a. Skin Borneo E. R. Alston [P.]
 b. Stuffed Malacca R. W. G. Frith (1844),
 A.S.B.
 c. Stuffed „ R. W. G. Frith (1844),
 A.S.B.

Sciurus lokroides.

Sciurus lokroides, *Hodgson J. A. S. B.*, v, p. 232 (1836); *id. J. A. S. B.*, x, p. 915; *McClelland P. Z. S.*, 1839, p. 152; *Ogilby Royle's Himal. Bot.*, p. lxxvii; *Walker Calc. Journ. N. H.*, iii, p. 266; *Blyth J. A. S. B.*, xvi, pp. 873, 877; *id. J. A. S. B.*, xviii, pt. i, p. 603; *Horsfield Cat. E. I. Mus.*, p. 153; *Blyth J. A. S. B.*, xxiv, p. 475; *Blyth Cat.*, no. 328, p. 104; *Ferdon Mamm.*, p. 169; *Blanford P. A. S. B.*, 1875, p. 198; *Anderson Anat. Zool. Res.*, p. 247; *Jentink Notes Leyd. Mus.*, v, p. 119; *Thomas P. Z. S.*, 1886, p. 61.

Sciurus assamensis, *Gray List Mamm. B. M.*, p. 143 (1843) [pt.]; *Horsfield Cat. E. I. Mus.*, p. 153; *Blyth J. A. S. B.*, xxiv, p. 475; *id. Cat.*, no. 326, p. 103; *Blyth J. A. S. B.*, xlv, *Burma List*, p. 37.

Sciurus blythii, *Tytler Ann. Mag. N. H.* (2), xiv, p. 172 (1854).

Macroxus similis, *Gray Ann. Mag. N. H.* (4), xx, p. 281 (1867).

Distribution.—From Nepal eastwards through the Himalayas to Assam and southwards through Manipur to Arakan, Prepara Island and Upper Burma.

a. Skin Nepal, 26-2-77 J. Scully.
 b. Skin Hetoura, Nepal, 17-12-77 J. Scully.
 c-d. 2 Skins and skulls Sikkim H. J. Elwes [Ex.]

<i>e-f.</i> 2 Skins	Darjeeling, 6,500 ft.	W. T. Blanford.
<i>g.</i> Skin, skull, ♂	Sikkim	L. Mandelli.
[black var.]		
<i>h-k.</i> 3 Skins ♂ ♂	Darjeeling, 4,000 ft.	W. G. Masson [P.]
	♀	
<i>l-n.</i> 3 Skins ♂	Darjeeling terat	J. Anderson.
<i>o-p.</i> 2 Skins ♀	" "	J. Anderson.
<i>q.</i> Skin ♀	Sikkim	J. Anderson.
<i>r.</i> Skin, skull	Darjeeling	J. Anderson.
<i>s.</i> Skin	"	C. S. Bonnevie (1848), A.S.B.
<i>t.</i> Skin, skull	Dacca	Mus. Collector.
<i>u-v.</i> 2 Skins	Lushai country	Mus. Collector.
<i>w-y.</i> 3 Skins, skull	Garro hills	J. Anderson.
<i>z-b².</i> 3 Skins	Naga hills	H. H. Godwin Austen.
<i>c²-f².</i> 4 Skins ♂ ♀	" "	A. W. Chennell.
<i>g²-j².</i> 3 Skins,	Samagooting, Assam	J. Butler.
skull.		
<i>k²-n².</i> 4 Skins juv.	" "	J. Butler.
<i>o²-r².</i> 4 Skins ♂	Manipur hills	H. H. Godwin Austen.
<i>s².</i> Skin	Harmutti Dikrang, Assam.	H. H. Godwin Austen.
<i>t².</i> Skin, skull	Bhamo, Burma, 6-2-68	J. Anderson.
<i>u²-w².</i> 3 Skins,	Arakan	Mus. Collector.
skulls.		
<i>x².</i> Skin, skull	Jergo Isle, Arakan Coast.	G. M. Giles.
<i>y².</i> Skin	Preparis Isle, Bay of Bengal, 3-73.	V. Ball [Ex.]
<i>z².</i> Skin	Preparis, Isle, Bay of Bengal	F. Stoliczka.
<i>a³-b³.</i> 2 Skins ♂	Amherst Isle, Arakan Coast.	J. Armstrong.
<i>c³.</i> Skin	Sikkim	L. Mandelli.
<i>d³.</i> Skin, skele- ton.	Naga hills	H. H. Godwin Austen.
<i>e³-g³.</i> 3 Stuffed	Darjeeling	E. Blyth (1851), A.S.B.
<i>h³-j³.</i> 2 Stuffed	"	C. S. Bonnevie (1848), A.S.B.
<i>k³-l³.</i> 2 Stuffed	Assam	F. Jenkins (1846), A.S.B.
<i>m³-n³.</i> 2 Stuffed	Arakan	Sir A. Phayre, A.S.B.
<i>o³.</i> Stuffed	.....	A. Grote, A.S.B.
<i>p³.</i> Skull	Nowakot dist., Nepal, 27-11-77	J. Scully.
<i>q³.</i> Skull	Darjeeling	A. S. B.
<i>r³.</i> Skull ♂	Bhootan	Dr. Pemberton.
<i>s³-v³.</i> 4 Skulls	... ..	No history.
<i>w³.</i> Skin	E. Naga hills	H. H. Godwin Austen.
<i>x³.</i> Alc.	Cachar	N. Belletty (1872.)
<i>y³.</i> Alc.	Preparis Isle	F. Stoliczka
<i>z³.</i> Alc.	Darjeeling	W. T. Blanford.
<i>a⁴.</i> Alc.	.....	No history.
<i>b⁴.</i> Alc.	.....	No history.

Sciurus chinensis.

Sciurus chinensis, Gray *List Mamm. B. M.*, p. 144 (1843); *Horsfield Cat. E. I. Mus.*, p. 159; *Swinhoe P. Z. S.*, 1870, p. 634; *Anderson Anat. Zool. Res.*, p. 254.

Distribution—South China.

a Skin, skull China [J. Reeves] J. Anderson.

Sciurus tenuis.

Sciurus tenuis, *Horsfield Zool. Res.* (1824); *Cantor J. A. S. B.*, xv, p. 250; *Blyth J. A. S. B.*, xvi, p. 874; id. *J. A. S. B.*, xx, p. 166; *Horsfield Cat. E. I. Mus.*, p. 153; *Blyth J. A. S. B.*, xxiv, p. 476; id. *Cat.*, no. 329, p. 104; *Anderson Anat. Zool. Res.*, p. 255; *Jentink Notes Leyd. Mus.*, v, p. 125; *Thomas P. Z. S.*, 1886, p. 76.

Sciurus affinis, *Horsfield (nec. Raffles) Zool. Res.* (1824); id. *Cat. E. I. Mus.*, p. 156.

Sciurus modestus, *Müller and Schlegel Tem. Verhandl.*, p. 96, pl. xxiv (1844); *Blyth J. A. S. B.*, xxiv, p. 476; *Anderson Anat. Zool. Res.*, p. 253.

Distribution.—The Malayan peninsula and the islands of Sumatra, Java, Borneo and Pulo Panjang in the Gulf of Siam; Müller and Schlegel recorded it from China: this, however, is probably a mistake.

a. Skin, skull, ♀ Perak, Mus. Collector (Jaffa)
b. Skin, skull Malacca [A. R. Wallace] British Mus. [Ex.]
c. Skin, skull Java Batavian Soc. (1844), A.S.B.

Sciurus lokriah.

Sciurus lokriah, *Hodgson J. A. S. B.*, v, p. 232 (1836); *McClelland P.Z.S.*, 1839, p. 151; *Ogilby Royle's Himal. Bot.*, p. lxxvii; *Hodgson J. A. S. B.*, x, p. 915; *Gray Cat. Hodgs. Coll.*, 1st ed., p. 23; *Blyth J. A. S. B.*, xvi, p. 873; *Horsfield Cat. E. I. Mus.*, p. 153; *Blyth J. A. S. B.*, xxiv, p. 475; id. *Cat.*, no. 327, p. 104; *Ferdon Mamm.*, p. 169; *Blyth J. A. S. B.*, xlv, *Burma List*, p. 37; *Anderson Anat. Zool. Res.*, p. 250; *Jentink Notes Leyd. Mus.*, v, p. 120; *Thomas P. Z. S.*, 1886, p. 61.

Sciurus subflaviventris, *Gray List Mamm. B. M.*, p. 144 (1843); *Horsfield Cat. E. I. Mus.*, p. 152

Nepalese, Lokria; Bhotea, Zhamo; Lepcha, Killi tingdong.

Distribution.—From Nepal eastwards to the Naga hills and Assam; is also found in the Arakan hills; it is found at a higher elevation apparently than *Sciurus lokroides*.

This species can be at once distinguished from *Sciurus lokriah* by the white tuft of hair behind the ear-conch and by its brighter ventral surface.

a. Skin, ♀ Sheopuri Ridge, Nepal J. Scully.
 Valley, 19-6-78.
b-c. 2 Skins, ♂ Sheopuri Ridge, Nepal J. Scully.
 Valley, 14-2-78.
d. Skin, Sisagutu, Nepal, J. Scully.
 27-12-77.
e. Skin, skull Nepal (Hodgson) India Mus., London.
f. Skin, Darjeeling J. Anderson.
g. Skin, ♀ Sikkim L. Mandelli
h. Skin, juv. Darjeeling Mrs. Oakes (1843), A.S.B.

<i>j.</i> Skin,	Naga hills	H. H. Godwin Austen.
<i>n.</i> Skin,	" "	A. W. Chennell.
<i>l.</i> Skin, juv.	Arakan "	Sir A. Phayre, A. S. B.
<i>m-n.</i> 2 Stuffed,	Nepal	Mrs. Oakes, A. S. B.
<i>o.</i> Skull,	... ..	No history, A. S. B.
<i>p.</i> Skin,	Shillong, Assam	T. la Touche.

Sciurus rufigenis.

Sciurus rufigenis, *Blanford P. A. S. B.*, p. 72 (1878); *id. J. A. S. B.*, xlvii, p. 156, pls. vii, viii; *Thomas P. Z. S.*, 1886, p. 71.

Sciurus lokriah, *apud Jentink Notes Leyd. Mus.*, v, p. 120 (1883).

Distribution.—This species has only been found hitherto on the slopes of Mt. Mooleyet to the east of Moulmein in Tenasserim at an elevation of about 5,000 ft.

[No specimens in the Museum.]

Sciurus alstoni.

Sciurus alstoni, *Anderson Anat. Zool. Res.*, p. 252, pl. xxi (1878); *Jentink Notes Leyd. Mus.*, p. 118.

Distribution.—The type and only specimen known is said to have come from Borneo.

a. Skin Borneo? Purchased.

[Type of *S. alstoni*, Anderson.]

Sciurus melanotis.

Sciurus soricinus, *Waterhouse Cat. Mamm. Mus. Zool. Soc.*, p. 46 (1838); *Anderson Anat. Zool. Res.*, p. 265; *Jentink Notes Leyd. Mus.*, v, p. 131.

Sciurus melanotis, *Müller and Schlegel Tem. Verhandl.*, p. 98, pl. xiv, figs. 4, 5 (1839-44).

Distribution.—Java, Borneo, Sumatra, and Banka.

Müller's name is the correct one for this squirrel since Waterhouse gave no description, but only named it in his catalogue of the Museum of the Zoological Society.

a. Skin Sarawak (Wallace) E. R. Alston [P.]

Sciurus quinquestriatus.

Sciurus quinquestriatus, *Anderson P. Z. S.*, p. 142, pl. x. (1871); *Blyth J. A. S. B.*, xlv, *Burma List*, p. 37; *Anderson Anat. Zool. Res.*, p. 266; *Jentink Notes Leyd. Mus.*, v, p. 123.

Distribution.—This species has been found only in the Kakhyen hills in Yunnan on the Burmese border.

a-b. 2 Skins, Ponsee, Kakhyen hills, J. Anderson.
2 skulls. 3,200 ft., 4-3-68.

- c. Skin Ponsee, Kakhyen hills, J. Anderson.
3,200 ft., 18-4-68.
d. Stuffed Ponsee, Kakhyen hills. J. Anderson.
3,000 ft., 24-2-68.

[Type of *S. quinquestriatus*, Anderson.]

Sciurus ferrugineus.

- Sciurus finlaysoni*, *Horsfield Zool. Res.* (1824); id. *Cat. E. I. Mus.*, p. 154; *Blanford Ann. Mag. N. H.* (4), i, p. 152.
Sciurus ferrugineus, *F. Cuvier Hist. Nat. Mamm.*, livr. lix, with plate (1829); *Blyth J. A. S. B.*, xxxi, p. 332; *McMaster Notes on Jerdon*, pp. 49, 195; *Blyth Cat.*, no. 317, p. 101; id. *J. A. S. B.*, xlv, *Burma List*, p. 36; *Anderson Anat. Zool. Res.*, p. 243.
Sciurus keraudrenii, *Lesson, Cent. Zool.*, p. 11, pl. i (1830); *Blyth J. A. S. B.*, xvi, p. 872; id. *J. A. S. B.*, xxiv, p. 474; *Horsfield Cat. E. I. Mus.*, p. 156.
Sciurus splendidus, *Gray Ann. Mag. N. H.*, x, p. 263 (1842).
Sciurus cinnamomeus, *Temminck Esquis. Zool.*, p. 250 (1853).
Sciurus siamensis, *Gray, P. Z. S.*, p. 478 (1859); id. *P. Z. S.*, 1861, p. 137.
Sciurus splendens, *Gray P. Z. S.*, p. 137 (1861).
Sciurus germani, *A. Milne Edwards Rev. Mag. Zool.* (2), xix, p. 193 (1867).
Sciurus bocourti, *A. Milne Edwards Rev. Mag. Zool.* (2), xix, p. 193 (1867).
Sciurus leucogaster, *A. Milne Edwards Rev. Mag. Zool.* (2), xix, p. 196 (1867).

Distribution.—Arakan and Pegu eastwards; is spread through Siam and Cambodia to the Island of Pulo Condor.

All the specimens in the Museum, except one of the entirely black variety [*S. germani* Milne Edw.], belong to the typical *S. ferrugineus* of a pure red colour with black feet and a white tail-tip; the various other forms of the species to which the larger number of the synonyms above have been applied are all Siamese and Cambodian forms; the types of these supposed species were examined by Anderson, who came to the conclusion that they were all accidental or geographical varieties.

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|---------------------|----------------------|--------------------------------|
| a. Skin | Arakan | Museum Collector. |
| b. Skin, skull | Rangoon [H. Fielden] | E. R. Alston [P.] |
| c-d. 2 Skins, skull | Burma | C. Williams (1865), A.S.B. |
| e. Skin ♂ | | E. R. Alston [P.] |
| f. Skin, skull. | | No history, A. S. B. |
| g-h. 2 Stuffed. | Arakan | Sir A. Phayre (1845), A. S. B. |
| j-k. 2 Stuffed ♂ ♀ | Syriam, Pegu. 1-76 | J. Armstrong |

Var. germani.

- | | | |
|----------|--------------------------------|------------------|
| a. Skin. | Pulo Condor Isle,
Cambodia. | Paris Mus. [Ex.] |
| | [M. Germain. Col.] | |

Sciurus badging.

- ? *Sciurus notatus*, *Boddaert Elench. Anim.*, p. 119 (1785) *
Sciurus badging, *Kerr Linn. Anim. Kingd.*, p. 269 (1792)*; *Thomas P. Z. S.*, 1886, p. 76; *Fentink Notes Leyd. Mus.*, xi, p. 27.
Sciurus plantani, *Ljuugh Kongl. Vettens. Akad. N. Handl.*, xxii, p. 99, pl. i. (1801); *Horsfield Zool. Res., with plate*, 1824; *id. Cat., E. I. Mus.*, p. 151; *Anderson Anat. Zool. Res.*, p. 267; *Fentink Notes Leyd. Mus.*, v, p. 133.
Sciurus gingianus, var. "Plantane Squirrel," *Shaw Genl. Zool.*, ii, pt. i, p. 147 (1801).
Sciurus bilineatus, *Desmarest N. Dict. d'Hist. Nat.*, x, p. 106 (1817).
Sciurus bivittatus, *Desmarest Mamm. Suppl.*, p. 543 (1820); *Horsfield Zool. Res.*, 1824.
Sciurus vittatus, *Raffles Linn. Trans.*, xiii, p. 259 (1822); *F. Cuvier, Hist. Nat. Mamm., with plate*; *Müller and Schlegel Tem. Verhandl.* p. 94; *Cantor F. A. S. B.*, xv, p. 250; *Blyth F. A. S. B.*, xvi, p. 872, *Horsfield Cat. E. I. Mus.*, p. 152; *Blyth F. A. S. B.*, xxiv, p. 476; *id. Cat.*, no. 332, p. 104; *Anderson Anat. Zool. Res.*, p. 266.
Sciurus nigrovittatus, *Horsfield Zool. Res.* (1824); *Müller and Schlegel Tem. Verhandl.* p. 95; *Cantor F. A. S. B.*, xv, p. 250; *Blyth F. A. S. B.*, xvi, p. 872; *Horsfield Cat. E. I. Mus.*, p. 152; *Blyth F. A. S. B.*, xxiv, p. 476; *id. Cat.*, no. 333, p. 105.
Sciurus griseiventer, *Is. Geof. St. Hil. Zool. Voy. aux Indes orient. Bélanger*, p. 147 (1834).

Distribution.—The Malay peninsula and the Islands of Sumatra, Java and Borneo; also Canton according to Müller.

a. Skin,	♀	Taping River, Perak	Mus. Collector.
b. Skin, skull		Malacca	F. Stoliczka.
c. Skin.		Malay peninsula	Rev. F. Lindstedt, A. S. B.
d. Skin.	♂	West Java	Purchased.
		[Wallace, 1861].	
e. Skin.		" "	Purchased.
f. Skin.	♂	Sarawak	Purchased.
		[Wallace, 1854].	
g. Skin.	♂		E. R. Alston [P.]
h. Skin, skull.	♂		W. Rutledge.
j. Skin, skeleton	♀		Zoological Gardens.
k. Skull, skull.			A. S. B.
l-n. 3 Stuffed.		Malay peninsula.	G. Moxon, A. S. B.
o-p. 2 Stuffed.		" "	E. Lindstedt, A. S. B.
q. Skin, skeleton	♂		Zoological Gardens.

Sciurus prevostii.

- Sciurus prevostii*, *Desmarest Mamm.* p. 335 (1820); *Waterhouse P. Z. S.* 1842, p. 116; *Anderson Anat. Zool. Res.*, p. 269; *Fentink Notes Leyd. Mus.*, v, p. 31; *id. ibid.* xi, p. 27; *Thomas, P. Z. S.*, 1886, p. 76.
Sciurus rafflesii, *Vigors and Horsfield, Zool. Journ.*, iv, p. 113, pl. iv. (1828); *Müller and Schlegel Tem. Verhandl.*, p. 93; *Cantor F. A. S. B.*, xv, p. 248; *Blyth F. A. S. B.*, xvi, p. 871; *Temminck Esquiss. Zool.*, p. 242; *Blyth F. A. S. B.*, xxiv, p. 472; *id. Cat.*, no. 315, p. 101.
Sciurus redimitus, *Boon Mensch, N. Verhandl. Nederl. Inst.*, ii, p. 243, with plate (1829)*; *Temminck Esquiss. Zool.*, p. 245; *Blyth F. A. S. B.*, xxiv, p. 472; *id. Cat.*, no. 316, p. 101.
Sciurus rufogularis, *Gray Ann. Mag. N. H.*, x, p. 263 (1842).
Sciurus rufonigra, *Gray Ann. Mag. N. H.*, x, p. 263 (1842).

Sciurus erythromelas, *Temminck Esquiss. Zool.*, p. 248 (1853).

Sciurus prevostii, var. *sumatrana*, var. *bangkana* and var. *bornensis*, *S. atricapillus*, and *S. erythrogenys*, *Schlegel Nederl. Tijdsch*, i, pp. 25-29, pl. i, ii (1863).

Macroxus rafflesii, *Macroxus sarawakensis*, *Macroxus pluto*, *Gray Ann. Mag. N. H.* (3), xx, pp. 277, 283, (1867).

Distribution.—The Malay peninsula, Sumatra, Banka, Billiton, Borneo and Celebes.

a. Skin		Malacca	E. R. Alston [P.]
b. Skin	♀	Matang, 9-70	E. R. Alston [P.]
c-d. 2 Skins	♂	Borneo	E. R. Alston [P.]
		and skulls.	
e. Skin, skeleton		.....	Zoological Gardens.
f. Stuffed and		Malacca	A. Charlton, A. S. B.
skull.			
g. Stuffed and		„	R. W. G. Frith, A. S. B.
skull.			
h. Stuffed		Borneo	Batavian Soc. (1844) A.S.B.
j. Alc.	♂	.....	Zoological Gardens.
k. Alc.	♀	.....	O. L. Fraser.

Sciurus palmarum.

Sciurus palmarum, *Linnaeus Syst. Nat.*, 12th ed., i, p. 86 (1766); *Sykes P. Z. S.*, 1831, p. 103; *Waterhouse Charlesw. Mag. N. H.*, i, 1837, p. 496; *Elliot Madr. Journ.*, x, p. 216 [pt.]; *Ogilby Royle Him. Bot.*, p. lxvii; *Wagner Hugel's Kaschmir*, iv, p. 573; *Hutton, F. A. S. B.*, xv, p. 168; *Blyth F. A. S. B.*, xvi, 874; id. *F. A. S. B.*, xx, p. 166; *Horsfield Cat.*, *E. I. Mus.*, p. 152; *Blyth Cat.*, no. 339, p. 106; *Ferdon Mamm.*, p. 170; *McMaster Notes on Ferdon*, pp. 50, 196; *Stoliczka F. A. S. B.*, xli, p. 228; *Rainey P. A. S. B.*, 1875, p. 159; *Blanford Persia*, p. 50; *Anderson Anat Zool. Res.*, p. 257; *Fentink Notes Leyd. Mus.*, v, p. 138; *Murray Zool. Sind.*, p. 42; *Thomas P. Z. S.*, 1886, p. 56.

Sciurus penicillatus, *Leach. Zool. Misc.*, i, p. 6, pl. i (1814)*; *Horsfield Cat. E. I. Mus.* p. 152.

The Palm squirrel; Hindustani, Gilheri; Bengali, Beral or Lakki; Mahratta, Kharri; Canarese, Alalu; Telegu, Vodata; Waddurs, Urta.

Distribution.—The Palm squirrel is found all over the peninsula of India from the terai region of the Himalayas southwards; westwards it has been got by Blanford at Pishin in Persian Baluchistan, and eastwards it does not seem to occur beyond Calcutta; it is also said to be absent from the east coast country about the Northern Circars and from Malabar.

a. Skin	♀	Pishin, Baluchistan,	W. T. Blanford.
		7-2-72.	
b. Skin		Bichiakoh, Nepal terai,	J. Scully.
		21-12-77.	
c-d. 2 Skins	♂	Manbhoom	Mus. Collector (1866).
e. Skin		Calcutta	E. Blyth (1842), A. S. B.
f-g. 2 Skins	♂	„	J. Anderson.
h. Skin,	♂	Botanical Gardens	J. Anderson (1870).
skull.			

j. Skin	nr. Chanda, C. P., 6-5-67	Museum Collector.
k. Skin, skull	Hyderabad	H. Gould (1855), A. S. B.
l. Skin	.....	E. R. Alston, [P.]
m. Stuffed	Calcutta	E. Blyth (1842), A. S. B.
n. Alc.	Rajanpur, Punjab	E. Saunders,
o. Alc.	.....	O. L. Fraser,
(white var.)		

Sciurus tristriatus.

Sciurus tristriatus, *Waterhouse Charlesw. Mag. N. H.*, i, p. 496 (1837); id, *P. Z. S.*, 1839, p. 118; *Blyth J. A. S. B.*, xvi, pp. 874, 1001; id. *J. A. S. B.*, xviii, p. 601; id. *J. A. S. B.*, xx, p. 166; *Kelaart Prodr. Faun. Zeylan.*, p. 51; *Blyth Cat.*, no. 340, p. 106; *Ferdon Mamm.*, p. 171; *Anderson Anat. Zool. Res.*, p. 258; *Fentink Notes Leyd. Mus.* v, p. 137.
Sciurus palmarum, *apud Elliot, Madr. Journ.*, x, p. 216 (1839) [pt.]
Sciurus penicillatus, *apud Gray, List Mamm. B. M.*, p. 141 (1841).
Sciurus brodiei, *Blyth J. A. S. B.*, xviii, p. 602 (1849); id. *J. A. S. B.*, xx, p. 166; id. *J. A. S. B.*, xxi, p. 350; *Layard Ann. Mag. N. H.* (2), ix, p. 335; *Kelaart Prodr. Faun. Zeylan.*, p. 53.
Sciurus kelaarti, *Layard J. A. S. B.*, xviii, p. 602 (1849); *Blyth J. A. S. B.*, xx, p. 166; id. *J. A. S. B.* xxi, p. 350; *Kelaart Prodr. Faun. Zeylan.*, p. 53.
Sciurus dussumierii, *A. Milne Edwards Rev. Mag. Zool.* (2), xix, p. 226 (1867).

Cingalese, Leyna.

Distribution—Sikkim Himalayas, Midnapore and through Central and Southern India and Ceylon, especially in forest country; it does not appear to be found in the low country round Madras.

The specimens lettered "a," "g" and "h" in the list below from Sikkim and Travancore respectively, differ considerably from the rest of the specimens, and perhaps might be considered to form a distinct variety; the dorsal stripes which are particularly conspicuous in all the other specimens in these abovementioned ones are reduced to insignificance.

a. Skin	Sikkim	H. J. Elwes [Ex.]
b-c. 2 Skins	Midnapore, Bengal	E. Blyth, A. S. B.
d. Skin	nr. Ranchi, 18-5-70	W. T. Blanford.
e. Skin, skull	Trombay Isle, Bombay,	H. H. Godwin Austen.
	21-1-75.	
f. Skin	Kalakhul, 25-2-75.	H. H. Godwin Austen.
g-h. 2 Skins	Travancore.	Purchased.
j. Skin	Ceylon.	R. Templeton, A. S. B.
k. Skin	"	E. L. Layard (1845), A. S. B.

[The above two are types of *S. kelaarti*, Layard.]

l. Skin	Ceylon.	E. F. Kelaart (1850), A. S. B.
m. Skin	"	Columbo Museum.
n-g. 4 Skins, skull	.....	F. Day [P.]
r. Skin	.....	No history.
s. Stuffed	Ceylon	E. L. Layard, A. S. B.

[Type of *S. brodiei*, Blyth.]

t-u. 2 Stuffed	.....	No history, A. S. B.
v. Skull	.....	No history.

Sciurus sublineatus.

Sciurus sublineatus, *Waterhouse P. Z. S.*, p. 19. (1838); *Blyth J. A. S. B.*, xvi, p. 875; *Horsfield Cat. E. I. M.*, p. 151; *Blyth Cat.*, no. 342, p. 107; *Jerdon Mamm.*, p. 173; *Anderson Anat. Zool. Res.*, p. 260; *Jentink Notes Leyd. Mus.*, v, p. 136.

Sciurus delesserti, *Gervais Bull. Soc. Philom. (dans l'Institut, Journ. Gen. des Soc. Sci.) 1st sect.*, no. 386 (1841)*; *Blyth J. A. S. B.*, xi, p. 880; *Guérin Méniville Journ. d'un Voyage dans l'Inde (Delessert)*, p. 18, pl. iii*.

Sciurus trilineatus, *Waterhouse apud Blyth J. A. S. B.*, xx, p. 165 (1851) *Kelaart Prodr. Faun. Zeylan.*, p. 54.

Distribution.—The hills of Southern India and Ceylon.

a. Skin	Nilgiris	T. C. Jerdon (1844), A.S.B.
b. Skin	Malabar	Rev. J. Baker (1859), A.S.B.
c. Skin, skull	Ceylon	E. F. Kelaart (1857), A.S.B.

Sciurus layardi.

Sciurus layardi, *Blyth J. A. S. B.*, xviii, p. 602 (1849); *Kelaart Prodr. Faun. Zeylan.*, p. 53; *Layard Ann. Mag. N. H.* (2), ix, p. 335; *Blyth Cat.*, no. 341, p. 107; *Jerdon Mamm.*, p. 172; *Anderson Anat. Zool. Res.*, p. 260.

Distribution.—Travancore hills and the highlands of Ceylon.

This squirrel is considered by Jentink to be identical with *S. tristriatus*, from which it differs however markedly in that the yellow dorsal streak extends a very much shorter distance both anteriorly and posteriorly, and the ventral surface is a bright chestnut instead of a very pale yellow, so that unless intermediate forms are found it would certainly be better to keep them apart.

a. Skin skull	Ambegamoa hills, Ceylon.	E. L. Layard (1843), A.S.B.
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[Type of *S. layardi*, Blyth.]

Sciurus berdmorei.

Sciurus berdmorei, *Blyth J. A. S. B.*, xviii, p. 603; *id.* *J. A. S. B.*, xxviii, p. 418; *id.* *J. A. S. B.*, xxxi, p. 333; *id. Cat.*, no. 338, p. 106; *id.* *J. A. S. B.*, xlv, *Burma List*, p. 37; *Anderson Anat. Zool. Res.*, p. 261; *Jentink Notes Leyd. Mus.*, v, p. 137, (1861); *Thomas P. Z. S.*, 1886, p. 71; *Anderson J. Linn. Soc.*, xxi, p. 340.

Sciurus mouhotii, *Gray P. Z. S.*, p. 137 (1861); *Blanford J. A. S. B.*, xlvii, p. 162.

* *Sciurus pyrrhocephalus*, *A. Milne Edwards Rev. Mag. Zool.* (2), xix, p. 225 (1867).

Distribution.—Tenasserim from Martaban to Mergui; also Cambodia and Cochin China.

a-b. 2 Skins ♂ ♀	nr. Martaban, Tenasserim	E. Blyth (1861), A.S.B.
c. Skin	Thaing, Mergui, 28-1-82	J. Anderson.

j^2-k^2 . 2 Alc.	East of Irrawady River	T. H. Hood (1872).
l^2-m^2 . 2 Alc.	Samagooting, Assam	J. Butler.
n^2 . Alc.	Darjeeling	W. T. Blanford, A. S. B.
o^2 . Alc.	Sibsagar, Assam	S. E. Peel
p^2-q^2 . 2 Alc.	Moulmein, Burma	J. Wood Mason.

Sciurus insignis.

Sciurus insignis, *F. Cuvier Hist. Nat. Mamm., livr. xxxiv, with plate* (1821); *Horsfield Zool. Res. with plate; Müller and Schlegel Tem. Verhandl., pp. 87, 99; Horsfield Cat. E. I. Mus., p. 151; Anderson Anat. Zool. Res., p. 262; Jentink Notes Leyd. Mus., v, p. 136; Thomas P. Z. S., 1886, p. 78.*

Distribution.—Malay peninsula from Selangore southwards, Sumatra, Java and Borneo; Anderson gives Canton, but this is somewhat doubtful.

a. Skin, skull ♂ Malacca E. R. Alston [P].

Sciurus vulgaris.

Sciurus vulgaris, *Linnaeus. Syst. Nat., 12th ed., i, p. 86* (1766).
Sciurus alpinus, *F. Cuvier Hist. Nat. Mamm., livr. xxiv, with plate* (1821).
Sciurus varius, *Pallas Zoog. Ross. As., i, p. 183* (1831).
Sciurus italicus, *Bonaparte Icon. Faun. Ital. with plate* (1838).
Sciurus europæus, *Gray List Mam. B. M., p. 139* (1843); *id. Cat. Hodgs. Coll., 1st ed., p. 23; Blyth Cat., no. 337, p. 106.*
 ♀ *Mustela calotus*, *Hodgson Calc. Journ. N. H., ii, p. 221, pl. ix* (1842).
Sciurus calotus, *Gray Ann. Mag. N. H. (3), xx, p. 272* (1867).

Distribution.—Europe and Northern Asia, as far south as the Caucasus, Thibet and Northern China.

a. Stuffed	England	Cornish Institution (1842), A.S.B.
b. Stuffed	"	A. D. Bartlett (1840), A.S.B.
c. Stuffed	"	W. Davison (1846), A.S.B.
d. Skull	"	A. D. Bartlett, A.S.B.
e. Alc.	♂ "	Zoological Gardens.

Sciurus fulvus.

Sciurus fulvus *Blanford Ann. Mag. N. H. (4), xvi, p. 311* (1875); *id. Persia, p. 49, pl. iv, fig. 1.*

Distribution.—South Persia.

This species will probably turn out to be identical with *Sciurus syriacus* of Ehrenberg, and has in fact been already considered so by Jentink; the types, however, have not been compared, as the only specimen of *S. fulvus* is the one now in the Museum here, so that for the present it has been left as a distinct species.

a. Skin ♂ nr. Shiraz, 4,000 feet Sir O. St. John (1870).

[Type of *Sciurus fulvus*, Blanford.]

Sciurus carolinensis.

Sciurus carolinensis, *Gmelin Syst. Nat.*, i, p. 148 (1788); *Allen Monographs N. Amer. Rodents*, p. 700.

Sciurus pennsylvanicus, *Ord Guthrie's Geogr.*, 2nd ed., p. 292 (1815)*.

Sciurus niger, *Godman Amer. Nat. Hist.*, ii, p. 133 (1826)*.

Sciurus leucotis, *Gapper Zool. Journ.*, v, p. 206, pl. xi (1830); *Blyth Cat.*, no. 335, p. 105.

Sciurus fuliginosus, *Bachman P. Z. S.*, p. 97 (1838).

Sciurus vulpinus, *Dekay New York Zool.*, i, p. 59 (1842).

Sciurus migratorius, *Audubon and Bachman Quad. N. Amer.*, i, p. 265, pl. xxxv (1849)*.

The Grey Squirrel.

Distribution.—Southern Canada; the United States east of the plains, South Mexico and Guatemala.

a. Skin	Ontario, Canada	J. H. Garnier [Ex.]
b. Skin	♂	Zoological Gardens.
c. Skin	.....	Purchased.
d. Alc.	♀ North America	W. Rutledge.
e. Alc.	.....	W. Rutledge.
f. Skin, skeleton.	♀	Zoological Gardens.
g. Stuffed	North Carolina	Rev. F. Fitzgerald (1852), A. S. B.

Sciurus niger.

Sciurus niger, *Linnæus Syst. Nat.*, 12th ed., i, p. 86 (1766); *Allen Monographs N. Amer. Rodents*, p. 717.

Sciurus cinereus, *Linnæus Syst. Nat.*, 12th ed., i, p. 86 (1766).

Sciurus variegatus, *Erxleben Syst. Reg. Anim.*, p. 421 (1777).

Sciurus vulpinus, *Gmelin Syst. Nat.*, i, p. 147 (1788).

Sciurus virginianus, *Kerr Linn. Anim. Kingd.*, p. 259 (1792)*.

Sciurus capistratus, *Bosc Ann. Mus. Paris*, i, p. 281 (1802)*.

Sciurus rufiventris, *M'Murtrie's Cuv. An. Kingd.*, i, p. 433 (1831)*.

Sciurus texianus, *Bachman P. Z. S.*, p. 86 (1838).

The Fox Squirrel.

Distribution.—Eastern United States westward to the plains.

a. Skin	North America	J. H. Garnier [Ex.]
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Sciurus hudsonius.

Sciurus vulgaris, *apud Forster Phil. Trans.*, lxii, p. 378 (1772).

Sciurus hudsonius, *Pallas Nov. Sp. Quad. e Glir.*, p. 376 (1778); *Blyth Cat.*, no. 336, p. 105; *Allen Monographs N. Amer. Rodents*, p. 672.

Sciurus carolinus, *Ord Guthrie's Geogr.*, 2nd ed., p. 292 (1815)*.

Sciurus rubrolineatus, *Desmarest Mamm.*, ii, p. 333 (1822).

The Chikaree,

Distribution.—The northern half of North America.

a. Skin	Lucknow, Ontario, 7-84	J. H. Garnier [Ex.]
b. Skin	Ontario.	J. H. Garnier [Ex.]
c. Skin	"	J. H. Garnier [Ex.]
d. Skin	N. America.	A. D. Bartlett (1842), A. S. B.

Sciurus annulatus.

Sciurus annulatus, *Desmarest Mamm.*, p. 338 (1820); *Blanford Abyssinia*, p. 278; *Jentink Notes Leyd. Mus.*, iv, p. 23.
Sciurus gambianus, *Ogilby P. Z. S.*, p. 103 (1835).
Sciurus multicolor, *Rüppell N. Wirbelth.*, p. 38, pl. xiii (1835).
Sciurus bougensis, *Heuglin Reise N. O. Afrika*, ii, p. 59 (1877)*.
Sciurus rufobrachiatus, *apud Huet Arch. Mus. Paris* (2), iii, p. 144 (1880).

Distribution.—Northern Africa from Senegal to Abyssinia.

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|---------|---|-----------------|
| a. Skin | Anseba valley, Abyssinia, 4,000 ft., 28 7-68. | W. T. Blanford. |
| b. Skin | Anseba valley, Abyssinia, 4,000 ft., 4-8-68. | W. T. Blanford. |

Genus RHINOSCIURUS.

Rhinosciurus, *Gray List. Mamm. B. M.*, p. 195 (1843). *Type*, *R. laticaudatus*.

Rhinosciurus laticaudatus.

Sciurus laticaudatus, *Müller and Schlegel Tem. Verhandl.*, p. 100, pl. xv, figs. 1, 2, 3 (1839-44); *Cantor J. A. S. B.*, xv, p. 251; *Blyth J. A. S. B.*, xx, p. 167.
Rhinosciurus tupaoides, *Gray List Mamm. B. M.*, p. 195 (1843); *Blyth J. A. S. B.*, xxiv, p. 477; *id. Cat.*, no. 345, p. 108.
Sciurus (Rhinosciurus) tupaoides, *Anderson Anat. Zool. Res.*, p. 275 (1878).
Rhinosciurus laticaudatus, *Jentink Notes Leyd. Mus.*, v, p. 140 (1883).
Sciurus (Rhinosciurus) laticaudatus, *Thomas P. Z. S.*, p. 78 (1886).

Distribution.—The Malay peninsula from Klang southwards and the Island of Borneo.

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|------------|-----------------|------------------------|
| a. Stuffed | Malay peninsula | G. Moxon (1851) A.S.B. |
|------------|-----------------|------------------------|

Genus TAMIAS.

Tamias, *Illiger Prodr.*, p. 83 (1811). *Type*, *T. striatus*.
Tenotis, *Rafinesque Am. Month. Mag.*, i, p. 362 (1817)*.

Tamias striatus.

Sciurus striatus, *Linnaeus Syst. Nat.*, 12th ed., i, p. 87 (1766).
Tamias americana, *Kuhl. Beitr. Zool.*, p. 69 (1820).
Sciurus (Tamias) lysteri, *Richardson Faun. Bor. Amer.*, i, p. 181, pl. xv (1829).
Tamias striatus, *Baird. N. Amer. Mamm.*, p. 292, pl. xlvi, fig. 2 (1857)*;
Allen Monographs N. Amer. Rodents, p. 782.

The Chipmunk.

Distribution.—Canada and the States east of the Rocky Mountains.

- | | | |
|---------------|---------|---------------------|
| a.-b. 2 Skins | Ontario | J. H. Garnier [Ex.] |
| c. Skin | ..... | No history. |

Genus **XERUS**.

Xerus, *Hempr. and Ehr., Symb. Phys.* (1832).

Xerus rutilus.

Sciurus rutilus, *Cretzschmar Rüppell's Atlas*, p. 59, pl. xxiv, (1826); *Blanford Abyssinia*, p. 278; *Fentink Notes Leyd. Mus.*, iv, p. 41.

Sciurus brachyotus, *Hempr. and Ehr. Symb. Phys.*, pl. ix (1832).

Sciurus simplex, *Lesson Hist. Nat. Mamm.*, v, p. 402 (1836).

Xerus rutilus, *Gray List. Mamm. B. M.*, p. 144 (1843).

Xerus dabagala *Heuglin Peters. Mitth.*, p. 17 (1861).

Xerus flavus, *A. Milne Edwards Rev. Mag. Zool.*, p. 229 (1867).

Xerus fuscus *Huet Arch. Mus. Paris* (2), iii, p. 139, pl. vi, fig., i (1880).

Distribution.—Abyssinia and Somali land across to Gaboon?

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|----------|-------------------------------------|---------|-----------------|
| a. Skin | Lower Sooroo, Abyssinia, 1,500 ft., | 12-1-68 | W. T. Blanford. |
| b. Skin | " " " | 1-6-68 | W. T. Blanford. |
| c. Skin. | Annesley Bay, Massowah | 4-1-68 | W. T. Blanford. |

Xerus erythropus.

Sciurus erythropus, *Et. Geoff. St. Hil. Cat. Mamm. Mus. Hist. Nat.*, p. 178 (1803)*; *Fentink Notes Leyd. Mus.*, iv, p. 43.

Sciurus albobittatus, *Desmarest N. Dict. Hist. Nat.*, x, p. 110 (1817).

Sciurus leuco-umbrinus, *Rüppell N. Wirbelth.*, p. 38 (1835); *Blanford Abyssinia*, p. 279.

Sciurus pyrrhopus *apud Wagner Schreb. Säugeth Suppl.*, iii, p. 215 (1843).

Xerus congicus, *apud Temminck Esquis. Zool.*, i, p. 125 (1853).

Xerus setosus, *Gray Ann. Mag. N. H.* (3), xx, p. 333 (1867) [pt.].

Distribution.—Africa from Senegal to Abyssinia and from Egypt to Zanzibar.

- | | | | | |
|-------------|---|--------------------------|---------------------|-----------------|
| a. Skin | ♀ | Adigrat-Tigré, Abyssinia | 8,000 ft., 3-4-68. | W. T. Blanford. |
| b. Skin | ♂ | Adigrat-Tigré, " | 8,000 ft., 31-3-68. | W. T. Blanford. |
| c. Skin | | Senafé-Tigré, " | 7,500 ft., 25-2-68. | W. T. Blanford. |
| d. Skin | ♀ | Adigrat-Tigré, " | 8,000 ft., 5-5-68. | W. T. Blanford. |
| e. Skin | ♀ | Bedjuk, Anseba valley, " | 4,200 ft., 16-7-68. | W. T. Blanford. |
| f. Skin | ♂ | Bedjuk, Anseba valley, " | 4,200 ft., 15-7-68. | W. T. Blanford. |
| g. Skin | ♀ | Senafé-Tigré, " | 7,500 ft., 27-3-68. | W. T. Blanford. |
| h. Skin | ♂ | Adigrat-Tigré, " | 8,000 ft., 21-4-68. | W. T. Blanford. |
| j. Skin | | Adigrat, " | 8,000 ft., 5-4-68. | W. T. Blanford. |
| k. Skin | ♂ | Adigrat-Tigré, " | 8,000 ft., 4-5-68. | W. T. Blanford. |
| l. Skin | ♀ | Senafé, " | 7,500 ft., 25-2-68. | W. T. Blanford. |
| m. Skin | | Abyssinia | | W. T. Blanford. |
| n. Skin | | " | | W. T. Blanford. |
| o. Skeleton | | " | | W. T. Blanford. |

Xerus capensis.

Sciurus capensis, *Kerr Linn. Anim. Kingd.*, p. 266 (1792)*; *Fentink Notes Leyd. Mus.*, iv, p. 48.

Sciurus namaquensis, *Lichtenstein Cat. Rerum Nat. Rariss.* p. 2 (1793)*.

Sciurus leuacanthus, *Kuhl Beitr. Zool.*, p. 67 (1820).

Sciurus ocellatus, *Smith Zool. Journ.*, iv, p. 439 (1829).

Sciurus setosus, *Smuts Enum. Mamm. Capens.*, p. 33 (1832); *Blyth Cat.*, no. 346, p. 108.

Distribution.—South Africa.

a. Stuffed South Africa E. L. Layard (1859), A.S.B.

Genus PTEROMYS.

Pteromys, G. Cuvier *Tableau Gen. in Leçons d'Anat. Comp.*, i, tabl. 1 (1800)*.

The following key is constructed to enable the reader to distinguish the typical forms only. All the species of this genus resemble one another so closely and so run into one another that it is impossible to construct a key into which every specimen will fit.

Key of the Indian Species.

- a. Dorsal surface dark brown or black; no tinge of reddish.
 - b. Hairs of dorsal surface but slightly tipped with white.
 - P. oral**, p. 33.
 - b². Hairs strongly tipped with white, giving the dorsal surface a hoary grizzled appearance.
 - P. cineraceus**, p. 33.
- a² Dorsal surface with a reddish or yellowish tinge, never black or brown.
 - c. No shoulder patch; dorsal surface comparatively uniform.
 - d. Fur of dorsal surface red, with well-developed white tips producing a hoary red appearance; tail longer than head or body.
 - P. alborufus**, p. 34.
 - d². Fur of dorsal surface dark maroon with but slight traces of the white tips to the hairs.
 - P. yunnanensis**, p. 35.
 - d³. Dorsal fur grizzled gray, more reddish on the parachute, tail shorter than the head and body together, body about 16, tail about 12 inches.
 - P. albiventer**, p. 35.
 - c². Dorsal fur generally dark maroon and forming a strong contrast to that of the shoulders and parachute, which is yellow, usually but slight traces of grizzling.
 - P. magnificus**, p. 35.
 - c³. Resembling *P. albiventer*, but somewhat smaller (body about 13, tail about 13 inches), with the top of the head

of a pure grey colour, contrasting with the colour of the rest of the body. . . . *P. caniceps*, p. 36.

Pteromys oral.

Var. A.—typicus.

- Sciurus petaurista*, *Pallas Miscell.*, p. 54, pl. vi. figs. 1, 2 (1766) [pt.]*.
Pteromys petaurista, *Müller and Schlegel Tem. Verhandl.*, p. 106 (1839-44);
Blyth *J. A. S. B.*, x, p. 919; id. *J. A. S. B.*, xvi, p. 865; *Horsfield Cat. E. I. Mus.*, p. 159; *Blyth* *J. A. S. B.*, xxviii, pp. 276, 286; id. *Cat.*, no. 291, p. 94; *Jerdon Mamm.*, p. 174.
Pteromys philippensis, *apud Elliot Madras Journ.*, x, p. 217 (1839).
Pteromys oral, *Tickell Calc. Journ. N. H.*, ii, p. 401, pl. xi (1842); *Blyth* *J. A. S. B.*, xi, p. 451; id. *J. A. S. B.*, xx, p. 165; *Kelaart Prodr. Faun. Zeylan*, p. 55; *Anderson Anat. Zool. Res.*, p. 279.
Pteromys griseiventer, *Gray List Mamm. B. M.*, p. 133 (1843); *Blyth* *J. A. S. B.*, xxviii, p. 277.

Var. B.—cineraceus.

- Pteromys petaurista*, *apud Walker Cal. Journ. N. H.*, iii, p. 266 (1843); *Horsfield Cat. Mamm. E. I. Mus.*, p. 159 [pt.]
Pteromys petaurista var. *cineraceus*, *Blyth* *J. A. S. B.*, xvi, p. 865 (1847).
Pteromys cineraceus, *Blyth* *J. A. S. B.*, xxviii, p. 276 (1859); id. *Cat.*, no. 292, p. 94; id. *J. A. S. B.*, xlv, *Burma List*, p. 35; *Blanford* *J. A. S. B.*, xlvii, p. 165; *Anderson Anat. Zool. Res.*, p. 281; *Thomas P. Z. S.*, 1886, p. 67.

Distribution.—The typical variety is found all over the peninsula of India and Ceylon wherever there are forests; it is specially abundant in the Malabar country. The var. *cineraceus* is apparently only found in Arakan.

This species including *P. cineraceus* and the following ones, namely, *P. alborufus*, *P. yunnanensis*, *P. magnificus*, *P. albiventer* and *P. caniceps*, all seem very closely allied to one another, and it is perhaps more as a matter of convenience than as a representation of their true relationship to one another that they should be kept separate; as far as their skulls are concerned it is impossible to separate them, and although typical specimens of these several so-called species are easily distinguished from one another, there are in the Museum collections intermediate forms between most of them.

The prevailing colour of *Pteromys oral* is dark brown or black, with only slight traces of white tips to the dorsal fur. These white tips are much more developed in *P. cineraceus*, the typical forms of which seem to be confined to Arakan. Southwards in Burma and Tenasserim, and northwards in Assam, the dark brown or black ground colour is replaced by bright red, and this variety seems to correspond to the species described by Milne Edwards from Moupin in Thibet (*P. alborufus*). The species described by Anderson from Momien in Yunnan resembles *P. alborufus*, but is

of a darker colour and has lost the white tips to the fur; this form is also distinguished by its long and very dark tail.

Pteromys magnificus from Nepal and Sikkim seems at first to be a well marked species with its very dark maroon dorsal surface, with hardly any trace of the white tips to the fur; there is however a specimen (*P. magnificus*, "g" in the list below) which is quite intermediate between the typical *P. magnificus* and the typical *P. alborufa*; in this specimen the maroon of the back is much lighter and the white tips to the fur producing the grizzled appearance so characteristic of *P. alborufa* are present, though in not so marked a form.

Pteromys caniceps seems constantly smaller than *P. magnificus* and *P. albiventer*, and since the skulls in the Museum are all immature, there is a strong suspicion that this will turn out to be the young of *P. magnificus* or of *P. albiventer*, but this will have to be proved by further investigations.

In *Pteromys albiventer* the contrast between the colour of the back and the colour of the parachute is not so marked as in *P. magnificus*: the shoulders, however, are somewhat yellow and traces of the white tips to the fur begin to appear: this latter feature is most marked in the Kashmir and Gilgit specimens.

Var. A.—typicus.

a-b. 2 Skins and skull.	Travancore	Purchased.
c. Skin	Ceylon	Columbo Museum.
d-e. 2 Skins ♀ and skeletons.	.....	W. Rutledge.
f. Stuffed	Travancore	Marquis of Tweeddale (1846), A.S.B.
g. Stuffed juv.	Midnapore	P. Homfray (1843), A.S.B.
h-k. 3 Skulls	.....	A.S.B.
l. Alc. juv.	Manbhoom	W. Theobald.

Var. B.—cineraceus.

a. Skin and skull.	♂ Arakan	Sir A. Phayre (1844), A.S.B.
[Type of <i>Pteromys cineraceus</i> , Blyth.]		
b. Skin and skull.	♂ Arakan	Museum Collector (1871).
c. Skin juv.	"	Sir A. Phayre (1844), A.S.B.
d. Stuffed ♀	.....	W. Rutledge (1870).

Pteromys alborufus.

Pteromys alborufus, *A. Milne Edwards Comptes Rend.*, lxx, p. 342 (1870); id. *Rech. Mam.*, p. 298, pls. xva, fig. 1, and xlv; *Anderson Anat. Zool. Res.*, p. 284.

Distribution.—Assam and Burma southwards to Tenasserim; also obtained from Moupin in Eastern Thibet.

a. Skin	Assam	F. Day.
b. Skin	Naga hills	H. H. Godwin Austen.
c. Skin skull,	Samagooting, Assam	J. Butler (1872).
d. Skin juv.	Cherrapoonjee, Assam	J. W. Laidlay (1847), A.S.B.
e. Skin	Pegu	Rev. J. Barbe, A.S.B.
f. Skin ♀	Mergui, 21-1-82	J. Anderson.
g. Skin, skeleton	Arakan	Zoological Gardens.
h. Skin	.....	No history.
j. Stuffed ♂	Arakan?	Sir A. Phayre (1844), A.S.B.
k. Stuffed	Tenasserim	Rev. J. Barbe (1844), A.S.B.
l. Alc.	Lampnee, Mergui,	J. Anderson.
	13-1-82.	

Pteromys yunnanensis.

Pteromys yunnanensis, *Anderson Ann. Mag. N. H.* (4), xvi, p. 282, (1875); *id. Anat. Zool. Res.*, p. 282, pl. xxii.

Distribution.—Has been got hitherto only from Momien in Yunnan.

a-d. 4 Skins, Momien, Yunnan, J. Anderson.
5,000 ft., 6-68.

[Types of *Pteromys yunnanensis*, Anderson.]

Pteromys magnificus.

Sciuropterus nitidus, *apud Hodgson, P. Z. S.*, p. 98 (1835).

Pteromys magnificus, *Hodgson J. A. S. B.*, v, p. 231 (1836); *Is. Geoff. St. Hil. Jacquemont Voyage, Zool.* p. 65; *Gray Cat. Hodgs. Coll. B. M.*, 1st ed., p. 22; *Blyth J. A. S. B.*, xvi, p. 866; *Horsfield Cat. E. I., Mus.*, p. 161; *Blyth J. A. S. B.*, xxviii, p. 277; *id. Cat.*, no. 294, p. 95; *Ferdon Mamm.*, p. 177; *P. L. Sclater P. Z. S.*, 1872, p. 635, pl. 1; *Anderson Anat. Zool. Res.*, p. 285.

Sciuropterus nobilis, *Gray Ann. Mag. N. H.*, x., p. 263 (1842).

Sciuropterus chrysothryx, *Hodgson J. A. S. B.*, xiii, p. 67, with plate (1844).

Pteromys nobilis, *Gray Cat. Hodgs. Coll. B. M.*, p. 22 (1846); *Blyth J. A. S. B.*, xvi, p. 866; *Horsfield Cat. E. I., Mus.* p. 160; *Blyth J. A. S. B.*, xxviii, p. 277.

Distribution.—Himalayas from Nepal to Sikkim; has also been got on the Khasia hills.

a. Skin	Nepal (Hodgson)	India Mus., London.
b. Skin, skull	Sikkim	L. Mandelli.
c. Skin, juv.	"	L. Mandelli.
d. Skin	Cherrapoonjee, Assam	F. Skipwith, A.S.B.
e. Stuffed	Darjeeling	A. Campbell, A.S.B.
f. Stuffed	.....	Purchased, A.S.B.
g. Stuffed	Darjeeling	W. Earle (1848), A.S.B.

Pteromys albiventer.

Pteromys albiventer, *Gray Illustr. Ind. Zool.*, ii, pl. xviii (1834); *Gray P. Z. S.*, 1836, p. 88; *id. Charlesw. Mag. N. H.*, i, 1837, p. 584; *Wagner Hugel's Kaschmir*, iv, p. 573; *Blyth J. A. S. B.*, xvi, p. 865; *Horsfield Cat. E. I. Mus.*, p. 162; *Anderson Anat. Zool. Res.*, p. 286.

Pteromys inornatus, *Is. Geoff. St. Hil. in Jacquemont Voyage, Zool.*, p. 62, pl. iv (1844); *Wagner Hugel's Kaschmir*, iv, p. 573; *Blyth J. A. S. B.*, xxviii, pp. 277, 287; *id. Cat.*, no. 293, p. 95; *Ferdon Mamm.*, p. 176; *Lydekker J. A. S. B.*, xlv, p. 285; *Blanford Yarkand Mammals*, p. 33.

Distribution.—The North-west Himalayas from Ladak to Nepal.

a. Skin, skull	Ladak	J. Biddulph.
b. Skin	Sonamarg, Kashmir, 18-8-72.	F. Stoliczka.
c. Skin, skull	Kashmir	J. E. T. Aichison.
d-f. 3 Skins	.....	Purchased.
g. Stuffed	Simla	J. N. Thomas (1845), A.S.B.
h. Alc.	Katmandu, Nepal	Museum Collector (1871).

Pteromys caniceps.

Sciuropterus caniceps, *Gray Ann. Mag. N. H.*, x, p. 262 (1842); *Blyth J. A. S. B.*, xvi, p. 866; *id. J. A. S. B.*, xxviii, p. 278; *id. Cat.*, no. 296, p. 96; *Ferdon Mamm.*, p. 178.

Pteromys caniceps, *Gray Cat. Hodgs. Coll. B. M.*, 1st. ed., p. 21; *Horsfield Cat. E. I. Mus.*, p. 160; *Anderson Anat. Zool. Res.*, p. 287.

Sciuropterus senex, *Hodgson Calc. Journ. N. H.*, iv, p. 293 (1844); *id. J. A. S. B.*, xiii, p. 68, with plate.

Distribution.—Himalayas from Gurwhal to Sikkim.

a. Skin	Landour, N. W. Hima- layas.	L. C. Stewart (1854), A.S.B.
b-d. 3 Skins	Sikkim -	L. Mandelli.
e. Skin	Gumphar, Darjeeling, 2,000 ft.	J. Knight.
f. Stuffed	Darjeeling	Mrs. Oakes (1842), A.S.B.

Pteromys nitidus.

Sciurus petaurista, *Pallas Miscell. Zool.*, p. 56 (1766) [pt.]*.

Pteromys nitidus, *Desmarest N. Dict. Hist. Nat.*, xxvii, p. 403 (1818); *Gray Illustr. Ind. Zool.*, ii, pl. xvii; *Müller and Schlegel Tem. Verhandl.*, pp. 107, 112; *Is. Geoff. St. Hil. Jacquemont Voyage, Zool.*, p. 65; *Cantor, J. A. S. B.*, xv, p. 252; *Blyth J. A. S. B.*, xvi, p. 866; *Brandt Mem. Acad. St. Peters.* (6), vii, p. 298*; *Horsfield Cat. E. I. Mus.*, p. 162; *Blyth J. A. S. B.*, xxxviii, p. 277; *id. Cat.*, no. 295, p. 96; *Zebebor Säugeeth. Novara*, p. 25; *Anderson Anat. Zool. Res.*, p. 290; *Thomas P. Z. S.*, 1886, p. 73; *Fentink Notes Leyd. Mus.*, xi, p. 26; *Thomas P. Z. S.*, 1889, p. 230.

Pteromys melanotis, *Gray P. Z. S.*, p. 88 (1836); *id. Charlesw. Mag. N. H.*, i., p. 584; *Horsfield Cat. E. I. Mus.*, p. 162; *Blyth J. A. S. B.*, xxviii, p. 277; *Anderson Anat. Zool., Res.*, p. 292.

Pteromys melanopsis, *Motley and Dillwyn Contrib. Nat. Hist. Labuan*, p. 2, (1855).

Pteromys grandis, *Swinhoe P. Z. S.*, p. 358, pl. xlv (1862); *id. P. Z. S.*, 1870, p. 634.

Distribution.—The Malay peninsula from Klang in Selangore

southwards, the islands of Sumatra, Java and Borneo, also Siam and Formosa.

a-b. 2 Skins	Siam [Finlayson]	India Mus., London.
c. Stuffed	Malacca	Rev. F. Lindstedt (1845), A.S.B.
d. Stuffed juv.	"	Rev. F. Lindstedt (1845), A.S.B.
e. Stuffed	.....	W. Rutledge (1872).

Genus SCIUROPTERUS.

Sciuropterus, *F. Cuvier Mem. Mus. Paris*, x, p. 116 (1823).

Key of the Indian Species.

- a. Larger forms, length without tail more than 7½ inches.
 - b. Pale grayish above; outer edge of hind-foot provided with a thick brush of hairs extending from the tarsal joint to the base of the 5th toe; skull long and narrow, 1.95 inches long by 1.55 inches broad. **S. fimbriatus**, p. 37.
 - b². Rather darker above; no brush to the hind-feet, which are much smaller than in *S. fimbriatus*; skull smaller and broader, 1.45 inches long by 1.15 inches broad. **S. alboniger**, p. 38.
 - b³. Grayish above, with black tufts of hair at the base of the posterior margin and the external surface of the upper angle of the ear; teeth ridged. **S. fuscocapillus**, p. 39.
 - b⁴. Above rufus; tail short, 5 inches; ears with tufts of long hair at the anterior and posterior angles of the ear-conch; tail rather bushy. **S. pearsoni**, p. 38.
 - b⁵. Resembling the last in size, but of a lighter grayish colour, with markedly distichous tail and no ear tufts. **S. sagitta**, p. 39.
- a². Much smaller, about 5½ inches long with tail; above rufus; tail above brown, below at base rufous. **S. spadaceus**, p. 40.

Sciuropterus fimbriatus.

Sciuropterus fimbriatus, *Gray Charlesw. Mag. N. H.*, i, p. 584 (1837); id. *P. Z. S.*, 1837, p. 67; *Blyth J. A. S. B.*, xvi, p. 866; *Horsfield Cat. E. I. Mus.*, p. 163; *Blyth J. A. S. B.*, xxviii, p. 278; id. *Cat.*, no. 298, p. 96; *Ferdon Mamm.*, p. 178; *Scully P. Z. S.*, 1881, p. 204; id. *Ann. Mag. N. H.* (5), viii, p. 68.

Pteromys leachii, *Gray P. Z. S.*, p. 88 (1836); id. *Charlesw. Mag. N. H.*, i, p. 584.

Pteromys fimbriatus, *Anderson Anat. Zool. Res.*, p. 296 (1878).

Distribution.—North-west Himalayas from Gilgit to Kumaon.

- a. Skin, skull Chitral, 5,000 ft. G. M. Giles.
 juv.
 b. Skin ♀ Nultar valley, Gilgit, J. Scully.
 1-8-79.
 c. Skin, skull ♂ Nultar valley, Gilgit, J. Scully.
 juv. 5-8-79.
 d. Skin, skull ♀ Chaprot, Gilgit, 30-7-79 J. Scully.
 e. Skin Gilgit, 6,000 ft., 6-8-80 J. Scully.
 f. Skin Ladak J. Biddulph.
 g. Skin Kashmir J. E. T. Aichison.
 h. Skin nr. Simla L. C. Stewart (1854), A.S.B.

Sciuropterus alboniger.

Sciuropterus alboniger, Hodgson *ℳ. A. S. B.*, v, p. 231 (1836); *Gray Cat. Hodgs. Coll.*, 1st ed., p. 22; *Blyth ℳ. A. S. B.*, xvi, p. 866; *Horsfield Cat. E. I. Mus.*, p. 163; *Blyth ℳ. A. S. B.*, xxviii, p. 278; id. *Cat.*, no. 302, p. 97; *Ferdon Mamm.*, p. 179; *Anderson Anat. Zool. Res.*, p. 298; *Thomas P. Z. S.*, 1886, p. 59.

Sciuropterus turnbulli, *Gray P. Z. S.*, p. 68 (1837); id. *Charlesw. Mag. N. H.*, i, p. 584.

Distribution.—Himalayas, Nepal to Bhootan, Assam, Yunnan and Cambodia.

- a. Skin. Darjeeling Mrs. Oakes (1842) A.S.B.
 b. Skin, skeleton and viscera in alc. Garo hills H. L. Haughton (1867).
 c. Skin. Cachar hills Museum Collector.
 d-e. 2 Skins Momien, Yunnan, 6-68 J. Anderson (1870).
 g-h. 2 Skins ♂ ♀ W. Rutledge.
 j. Stuffed Darjeeling J. Grace (1853) A.S.B.
 k. Skull Naga hills A. W. Chennell.
 l. Skin Shillong T. la Touche.

Sciuropterus pearsoni.

Sciuropterus pearsonii, *Gray Ann. Mag. N. H.*, x, p. 263 (1842); *Thomas P. Z. S.* 1886, p. 60.

Pteromys sagitta, *apud Walker, Cal. Journ N. H.*, iii, p. 266 (1843).

Pteromys (Sciuropterus) setosus, *Temminck and Schlegel Faun. Japon. Mamm.*, p. 49 (1847).

Sciuropterus villosus, *Blyth ℳ. A. S. B.*, xvi, p. 866 (1847); id. *ℳ. A. S. B.*, xxviii, p. 278; id. *Cat.*, no. 303, p. 97; *Ferdon Mamm.*, p. 179.

Pteromys pearsonii, *Horsfield Cat. E. I. Mus.*, p. 162 (1851); *Anderson Anat. Zool. Res.*, p. 293.

Sciuropterus kalcensis, *Swinhoe P. Z. S.*, p. 359 (1862); id. *P. Z. S.* 1870, p. 634.

Distribution.—Sikkim, Assam, Munipur and Yunnan; it has been also recorded from Formosa and Sumatra.

- a. Skin Assam A. W. Chennell.
 b. Skin Naga hills H. H. Godwin Austen.

c. Skin	Cachar	Mus. Collector (1867).
d. Skin	Momien, Yunnan 6,000 ft., 6-68.	J. Anderson.
e.f. 2 Stuffed	North Assam.	F. Bonyng (1845), A.S.B.

[2 Types of *Sciuropterus villosus* of Blyth].

g. Skull	Darjeeling	W. Theobald (1852), A.S.B.
h-j. 2 Alc	Ponsee, Yunnan	J. Anderson (1868).

Sciuropterus fuscocapillus.

Sciuropterus fuscocapillus, *Blyth J. A. S. B.*, xvi, p. 867 (1847); id. *J. A. S. B.*, xxviii, pp. 278, 286; id. *Cat. no. 297*, p. 96; *Ferdon Mamm.*, p. 180.
Sciuropterus layardi, *Kelaart Fourn. Ceylon As. Soc.*, v, p. 215 (1850);
Blyth J. A. S. B., xx, p. 165; *Kelaart Prodr. Faun. Zeylan.*, p. 56;
Blyth J. A. S. B., xxviii, p. 278.

Pteromys fuscocapillus, *Anderson Anat. Zool. Res.*, p. 294 (1878).

Distribution.—The Nilgiri hills, Travancore and the highlands of Ceylon.

[No specimen in the Museum.]

Sciuropterus sagitta.

Sciurus sagitta, *Linnaeus Syst. Nat.*, 12th ed., i, p. 88 (1766).

Pteromys horsfieldii, *Waterhouse P. Z. S.*, p. 87 (1837); *Anderson Anat. Zool. Res.*, p. 299.

Pteromys aurantiacus, *Wagner Munch. Gel. Anz.*, xii, p. 438 (1841).

Sciuropterus horsfieldii, *Cantor J. A. S. B.*, xv, p. 253 (1846); *Blyth J. A. S. B.*, xvi, p. 867; id. *J. A. S. B.*, xxviii, p. 278.

Sciuropterus sagitta, *Müller and Schlegel Tem. Verhandl.*, pp. 109, 113 (1839-44); *Blyth J. A. S. B.*, xxiii, p. 731; id. *ibid.*, xxiv, p. 187; *Thomas, P. Z. S.*, 1886, p. 75.

Sciuropterus phayrei, *Blyth J. A. S. B.*, xxviii, p. 278 (1859); id. *Cat.*, no. 304, p. 97; *McMaster Notes on Ferdon*, p. 53; *Blyth J. A. S. B.*, xlv, *Burma List*, p. 35.

Distribution.—Burma, Pegu and Tenasserim, Malay peninsula, Cambodia, and the islands of Java and Banka.

The above synonymy is given under the authority of Anderson, who identified *S. phayrei* with *S. horsfieldii* of Waterhouse, and of Thomas, who identifies *S. horsfieldii* with *S. sagitta* of Linnæus, but it does not seem unlikely that *S. phayrei* may be really an independent species: it certainly seems much smaller than the common squirrel, to which as to size *S. sagitta* is compared by Linnæus.

a-b. 2 Skins	Burma	Sir A. Phayre and Major Berdmore.
c-d. 2 Stuffed	,,	Sir A. Phayre and Major Berdmore.

[Types of *S. phayrei*, Blyth.]

Sciuropterus spadaceus.

Sciuropterus spadaceus, *Blyth J. A. S. B.*, xvi, p. 867 (1847); id. *J. A. S. B.*, xxviii, p. 278; id. *Cat.*, no. 305, p. 97; id. *J. A. S. B.*, xlv, *Burma List*, p. 35.

Pteromys spadaceus, *Anderson Anat. Zool. Res.*, p. 300 (1878).

Distribution.—Only known from Arakan.

It has been supposed by Thomas that this species is identical with *S. lepidus* of Horsfield, but until further evidence can be adduced by the comparison of specimens it may as well remain distinct.

a-c. 3 Skins	Arakan	Sir A. Phayre. A.S.B.
	[Types of <i>S. spadaceus</i> , Blyth.]	
d. Skin	Moulmein	J. Davis,
e. Alc.	Burma	J. Wood Mason (1872).

Sciuropterus volucella.

Sciurus volans, *Linnaeus Syst. Nat.*, 12th ed. i, p. 88 (1766) [pt.].

Sciurus volucella, *Pallas Nov. Sp. Quad. e Glir.*, pp. 351, 353 (1788).

Sciurus hudsonius, *Gmelin Syst. Nat.*, i, p. 153 (1788).

Sciurus sabrinus, *Shaw Genl. Zool.*, ii, pt. i, p. 157 (1801).

Sciuropterus volucella, *Lesson Man. Mamm.*, p. 242 (1827); *Blyth J. A. S. B.*, xxviii, p. 278; id. *Cat.*, no. 306, p. 98; *Allen Monographs N. Amer. Rodents*, p. 655.

Pteromys oregonensis, *Bachman Journ. Acad. N. Sci. Phila.* (i), viii, p. 101 (1839).

Pteromys alpinus, *Wagner Schreb. Säugeth. Suppl.*, iii, p. 230 (1843).

Distribution.—The whole of North America southwards to Guatemala.

a. Skin	Ontario, Canada	J. H. Garnier [Ex.]
b. Skull	Upton, Maine, U. S. A.	W. Theobald.

Genus EUPETAURUS.

Eupetaurus, *Thomas J. A. S. B.*, lvii, p. 257 (1888). *Type* *E. cineraceus*.

Eupetaurus cineraceus.

Eupetaurus cineraceus, *Thomas J. A. S. B.*, lvii, p. 258, pls. xxii, xxiii (1888).

Distribution.—Thibet; has been procured at Gilgit and also in Eastern Thibet north of Sikkim.

a. Skin and skull	Gilgit valley	G. M. Giles.
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[Co-type of *E. cineraceus*, Thomas.]

b. Skin and skull	Purchased.
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Genus **SPERMOPHILUS.**

Spermophilus, *F. Cuvier Mem. Mus., Paris*, vi, p. 293 (1822).

Spermophilus bactrianus.

Spermophilus bactrianus, *Scully J. A. S. B.*, lvi, p. 70 (1887).

Distribution.—Afghan Turkestan.

a. Skin, skull ♀ Khamiab, Oxus R., C. E. Yate.
12-6-86.

[Type of *Spermophilus bactrianus*, Scully.]

Genus **ARCTOMYS.**

Arctomys, *Schreber Säugeth.*, iv, p. 721 (1792).

In the following catalogue of the Marmots of Central Asia, Blanford's paper (*J. A. S. B.*, xlv, p. 113) has been followed. All the species found in Central Asia are represented in the Museum collections with the exception of *Arctomys robustus* of Milne Edwards (see below under *A. himalayanus*).

Key of the Indian Species.

a. Tail less than one-third of the length of the head and body; colour grayish yellow with diffused black tips to the hairs; length 22 to 24 inches. **A. himalayanus**, p. 41.

a². Tail one-third or more than one-third of the head and body.

b. Smaller, length 14 to 16 inches; colour grayish yellow.

A. hodgsoni, p. 42.

b². Larger, length about 25 inches; colour rufous yellow with a black patch on the back and ferrugineous below.

A. caudatus, p. 43.

Arctomys himalayanus.

Arctomys himalayanus, *Hodgson J. A. S. B.*, x, p. 777, with plate (1841); id. *J. A. S. B.*, xi, p. 287; *Blanford J. A. S. B.*, xlv, p. 121; *Lydekker J. A. S. B.*, xlvi, p. 285; *Blanford Yarkand Mammals*, p. 36, pls. xii, xiii, *Lydekker J. A. S. B.*, xlix, p. 7; *Buchner Wiss. Result. Przewalski Reisen Rodentia*, p. 25.

Arctomys himalayanus potius tibetensis hodie, *Hodgson J. A. S. B.*, xii, p. 409 (1843).

Arctomys bobac apud Gray, *List Mamm. B. M.*, p. 148 (1843); id. *Cat. Hodgs. Coll. B. M.*, 1st ed., p. 23; *Blyth J. A. S. B.*, xvi, p. 875; *Horsfield Cat. E. I. Mus.*, p. 164; *Blyth Cat.*, no. 348, p. 108; *Ferdon Mamm.*, p. 181; *Anderson P. Z. S.*, 1871, p. 560.

Arctomys tataricus, *Jameson L'Institut.*, xv, p. 384 (1847)*.

Arctomys tibetanus, *Adams P. Z. S.*, p. 521 (1858).

Distribution.—The Himalayas and Thibet from Western Ladak eastwards, the Kuenlun Mountains south of Yarkand, and the

Keria Mountains, which form the barrier between the valley of Tarim and the plateau of north Tibet.

Arctomys robustus of Milne Edwards (Rech. Mamm., p. 309) was given by Blanford in his paper on Himalayan Marmots as a synonym of *A. himalayanus*; Buchner in his accounts of Prze-walski's Mammals holds a contrary opinion and distinguishes *A. robustus* by its larger size, its darker back and sides, and the patch of rusty brown at the sides of the snout and round the ears; none of these characters are very decisive ones, but for the present *A. robustus* is left separate.

<i>a-b.</i> 2 Skins, skulls.	♂	Kitchik Yilak, Sanju Pass, Kuenlun Mts., 17-9-70.	G. Henderson.
<i>c.</i> Skin		Changchenmo valley, Ladak.	R. Lydekker.
<i>d.</i> Skin		Tibet	B. H. Hodgson (1845), A.S.B.
<i>e.</i> Skin	juv.	"	B. H. Hodgson (1845), A.S.B.
<i>f.</i> Stuffed, skull.	♀	Kitchik Yilak, Sanju Pass, Kuenlun Mts., 17-9-70.	G. Henderson.

Arctomys hodgsoni.

Arctomys hemachalanus, *Hodgson J. A. S. B.*, xii, p. 410 (1843); *Ferdon Mamm.*, p. 182; *Blanford J. A. S. B.*, xlv, p. 122.

Arctomys tibetanus, *apud Gray Cat. Hodgs. Coll.*, 1st ed., p. 24 (1846); *Horsfield Ann. Mag. N. H.* (2), xvi, p. 113.

Arctomys bobac, *apud Blyth, Cat.*, no. 348, p. 108 (1863) [pt.]

Arctomys hodgsoni, *Blanford Yarkand Mammals*, p. 35 (1876).

Distribution.—Himalayas of Nepal, Sikkim and Bhootan.

Blanford's name has been adopted in preference to *A. hemachalanus*, which is synonymous with *A. himalayanus* and cannot therefore stand.

It is a curious fact that no truly feral example of this species has yet been obtained; all the specimens mentioned below were caged.

<i>a.</i> Skin juv.	♂	Bhootan	J. Wood Mason.
<i>b.</i> Skin, skele- ton.	♂	"	W. Rutledge [P.]
<i>c.</i> Skin, skele- ton.	♀	"	W. Rutledge [P.]
<i>d-e.</i> 2 Skins, 2 skulls.	♂	.....	W. Rutledge.
<i>f-j.</i> 4 Skins, 4 skulls.	♀	.....	W. Rutledge.
<i>k.</i> Stuffed		.....	G. A. Bushby (1848), A. S. B.
<i>l.</i> Skeleton	♂	.....	W. Rutledge.
<i>m.</i> Skeleton		Darjeeling	Mrs. Turnbull.
<i>n.</i> Skin, skele- ton.	♀	.....	Zoological Gardens.
<i>o.</i> Alc.	♀	.....	W. Rutledge.
<i>p.</i> Skeleton	♂	.....	W. Rutledge.

Arctomys caudatus.

Arctomys caudatus, *Is. Geoff. St. Hil. Jacquemont Voyage, Zool.*, p. 66, pl. v (1844); *Wagner Hugel's Kaschmir*, iv, p. 573; *Blanford F. A. S. B.*, xliv, p. 122; id. *Yarkand Mamm.*, p. 37, pls. xiii, xiiia; *Lydekker F. A. S. B.*, xlix, p. 7; *Scully P. Z. S.*, 1881, p. 204; id. *Ann. Mag. N. H.* (5), viii, p. 98.

Arctomys bobac, *apud Adams, P. Z. S.*, p. 521 (1858); *Blyth Cat.*, no. 348, p. 108; *Jerdon Mamm.*, p. 182.

Arctomys tibetana, *apud Falconer Palæont. Memoirs*, i, p. 583 (1868).

Arctomys hemachelana, *apud Anderson, P. Z. S.*, p. 561 (1871).

The Red Marmot; Drowne or Drim of Kashmir; Pyā of Ladak,
Distribution.—The north-western parts of Kashmir in the Deosai, Dras, and Astor districts.

- | | | |
|------------------|--|-----------------------|
| a. Skin, skull ♀ | Matayon, Zogi-la Pass, G. Henderson.†
nr. Dras, Kashmir,
20-6-70. | |
| b. Skin, skull ♀ | Donkun, Astor distr., J. Scully.
Kashmir, 11,000 ft.,
20-5-80. | |
| c. Skin | juv. Deosai plain, N. W. J. Scully.
Kashmir, 12,000 ft.
7-80. [J. Biddulph.] | |
| d-h. 5 Skins | Kashmir | J. E. T. Aitchison. |
| j. Skin | | T. C. Jerdon. |
| k. Skull | | T. Brownlow, A. S. B. |

Arctomys aureus.

Arctomys aureus, *Blanford F. A. S. B.*, xliv, pp. 106, 123; id. *Yarkand Mamm.*, p. 33, pls. xi, xia.

? *Arctomys caudatus*, *apud Severtzoff Ann. Mag. N. H.* (4), xviii, p. 50 (1876).

Distribution.—The Pamir and country between the Pamir and Yarkand.

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|----------------|---|---------------|
| a. Skin, skull | Kaskasu Pass, between
Pamir and Yarkand,
13,000 ft., 15-5-74.
[Type of <i>A. aureus</i> , Blanford.] | F. Stoliczka. |
| b-c. 2 Skins | Kaskasu Pass, between
Pamir and Yarkand,
13,000 ft., 15-5-74. | F. Stoliczka. |
| d. Skin, skull | Little Pamir, 13,000 ft.,
5-86. | G. M. Giles. |
| e-f. 2 Skulls | Kaskasu Pass. | F. Stoliczka. |

Arctomys dichrous.

Arctomys dichrous, *Anderson Ann. Mag. N. H.* (4), xvi, p. 283 (1875); id. *F. Linn. Soc.*, xii, p. 579, pl. xxxi; *Blanford Yarkand Mammals*, p. 36;

† See Henderson and Hume, Lahore to Yarkand, p. 83.

Buchner Wiss. Result. Przewalski Reisen Rodentia, p. 40, pls. iii, iv, figs. 11-14.

Arctomys baibacina, *apud Severtzoff Ann. Mag. N. H.* (4), xviii, p. 50 (1876).

Distribution.—Hills north of Kabul (Anderson), Thian Shan (Severtzoff) and the Juldus valley (Przewalski).

<i>a.</i> ? Skull	Afghanistan.	Sir A. Burns, A.S.B.
<i>b-c.</i> 2 Skulls	juv. Kabul ?	J. Anderson.

Arctomys marmota.

Mus marmota, *Linnaeus Syst. Nat.*, 12th ed., i, p. 81 (1766).

Arctomys marmota, *Schreber Säugeth.*, iv, p. 722 (1792); *Blasius Säugeth. Deutsch.*, p. 280.

Marmota alpina, *Blumenbach Handb. Naturges.*, 12th ed., p. 70 (1830).

Distribution.—The higher regions of the Alps, Pyrennees and Carpathians.

<i>a.</i> Stuffed	Mrs. Turnbull (1867).
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Arctomys monax.

Mus monax, *Linnaeus Syst. Nat.*, 12th ed., i, p. 81 (1766).

Arctomys monax, *Schreber Säugeth.*, iv, p. 737 (1792); *Allen Monographs N. Amer. Rodents*, p. 911.

Arctomys empetra, *Sabine Linn. Trans.*, xiii, p. 584 (1822).

Distribution.—North America from Hudson's Bay to the Carolinas and from the Atlantic to Minnesota.

<i>a-b.</i> 2 Skins	Ontario, Canada	J. H. Garnier [Ex.]
<i>c.</i> Skin, skull ♀	.....	W. Rutledge.

Genus CASTOR.

Castor, *Linnaeus Syst. Nat.*, 12th ed., i, p. 78 (1766).

Castor fiber.

Castor fiber, *Linnaeus Syst. Nat.*, 12th ed., i, p. 78 (1766); *Allen Monographs N. Amer. Rodents*, p. 433.

Castor canadensis, *Kuhl Beitr. Zool.*, p. 64 (1820).

Castor americanus, *Richardson Back's Arctic Exped.*, p. 494 (1836)*.

Castor europæus, *Owen Brit. Foss. Mamm.*, p. 190 (1846); *Blyth Cat.*, no. 404, p. 123.

The Beaver.

Distribution.—Europe, Siberia and North America, though now extinct in the greater part of Europe and also in the Eastern States of North America.

<i>a.</i> Stuffed	Norway.	Christiania University (1844), A. S. B.
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Genus **MYOXUS.**

Myoxus, *Schreber Säugeth.*, iv, p. 824 (1792).

Myoxus pictus.

Myoxus pictus, *Blanford Ann. Mag. N. H.* (4) xvi, p. 311 (1875); id. *Persia*, p. 51, pl. iv, fig. 2.

Distribution.—Persia north of Ispahan.

a. Alc. ♂ Kohrud, N. of Ispahan, W. T. Blanford,
7,000 ft.

[Co-type of *M. pictus*, Blanford.]

Myoxus glis.

Sciurus glis, *Linnaeus Syst. Nat.*, 12th ed., i, p. 87 (1766).

Mus glis, *Pallas Nov. Sp. Quad. e Glir.*, p. 88 (1778).

Myoxus glis, *Zimmerman Geogr. Geschichte.*, ii, p. 351 (1780); *Blasius Säugeth Deutsch.*, p. 292; *Blyth Cat.*, no. 350, p. 109.

Glis esculentus, *Blumenbach Handb. Naturges.*, 12th ed., p. 67 (1830).

Distribution.—Central and Southern Europe.

a. Stuffed. France A. Malherbe (1854), A.S.B.

Genus **MUSCARDINUS.**

Muscardinus, *Kaup Entw. Europ. Thierw.*, p. 139 (1829)*.

Muscardinus avellanarius.

Mus avellanarius, *Linnaeus Syst. Nat.*, 12th ed., i, p. 83 (1766).

Myoxus muscardinus, *Schreber Säugeth.*, iv, p. 835 (1792).

Myoxus avellanarius, *Desmarest Mamm.*, p. 295 (1820); *Blasius Säugeth. Deutsch.*, p. 297; *Blyth Cat.*, no. 351, p. 109.

Muscardinus avellanarius, *Kaup Entw. Europ. Thierw.*, p. 139 (1829)*.

Distribution.—The whole of Europe, including the British Islands.

a-b. 2 Stuffed. England. A. D. Bartlett (1843), A.S.B.
c-e. 3 Alc. ♂ ♀ " A. D. Bartlett (1865).

Genus **HYDROMYS.**

Hydromys, *Et. Geoff. St. Hil. Ann. Mus., Paris*, vi, p. 81 (1805).

Hydromys chrysogaster.

Hydromys chrysogaster, *Et. Geoff. St. Hil. Ann. Mus., Paris*, vi, p. 81, pl. xxxvi (1805); *Gould Mamm. Austr.*, iii, pl. xxiv; *Blyth Cat.*, no. 398, p. 121; *Collett. Zool. F. B.*, ii, p. 841.

Distribution.—Queensland, New South Wales and Tasmania.

a. Stuffed. Tasmania. C. G. T. Lloyd (1860), A.S.B.

Hydromys fulvolavatus.

Hydromys fulvolavatus, *Gould Mamm. Austr.*, iii, pl. xxv (1863).

Hydromys leucogaster, *apud Blyth, Cat.*, no. 399, p. 122 (1863).

Distribution.—Southern and South-eastern Australia.

a-b. 2 Stuffed Port Philip, Melbourne Mr. Benson (1849), A.S.B.

c-d. 2 Skins South Australia Adelaide Mus. [Ex.]

e. Skin Australia Adelaide Mus. [Ex.]

Hydromys leucogaster.

Hydromys leucogaster, *Et. Geoff. St. Hil. Ann. Mus., Paris*, vi, p. 81, pl. xxxvi (1805); *Gould Mamm. Austr.*, iii, pl. xxvi.

Distribution.—Australia, New South Wales, and Queensland.

α. Alc. Queensland Brisbane Mus. [Ex.]

Genus PLATACANTHOMYS.

Platacanthomys, *Blyth J. A. S. B.*, xxviii, p. 288 (1859). *Type*, *P. lasiurus*.

Platacanthomys lasiurus.

Platacanthomys lasiurus, *Blyth J. A. S. B.*, xxviii, p. 289 (1859); *id. Cat.*, no. 349, p. 109; *Peters P. Z. S.*, 1865, p. 397, pl. xx; *Ferdon Mamm.*, p. 210.

Distribution.—South Malabar and Travancore.

a-m. 12 Skins	Travancore	Rev. H. Baker (1870).
n-q. 4 Stuffed	South Malabar	Rev. H. Baker, (1859) A.S.B.
r. Skeleton mtd.	Travancore	Rev. H. Baker.
s. Skeleton impf.	"	Rev. H. Baker.
t-u. 2 Alc. 2 skulls	"	Rev. H. Baker.
v-a ² . 6 Alc. ♂ ♀ and 4 juv.	Trevandrum	H. S. Ferguson.

Genus GERBILLUS.

Gerbillus, *Desmarest N. Dict. d'Hist. Nat.*, 1st ed., xxiv, p. 22 (1804)*.

Meriones, *Illiger. Prodr.*, p. 82 (1811).

Rhombomys, *Wagner Schreber Säugeth. Suppl.*, iii, p. 485 (1843).

Psammomys, *Cretschmar Rüppell's Atlas*, p. 56 (1826). *Type*, *G. obesus*.

Key of the Indian species.

- a.* Larger, head and body 5 to 7 inches in length.
- b.* With large ears; tail dark banded above and below; above rufous brown, below white; feet naked below; outer wall of the antorbital foramen rounded and projecting in front; bullæ moderate. ***G. indicus***, p. 47.
- b.*² Ears moderate; tail dark banded above, light below; feet thickly haired anteriorly; outer wall of antorbital foramen perpendicular; bullæ much inflated. ***G. erythrurus***, p. 49.
- b.*³ Ears very small; tail concolorous with the body, with a dusky terminal pencil; above sandy yellow, below lighter, but not white; feet anteriorly haired, posteriorly naked; bullæ moderate. ***G. hurrianæ***, p. 50.
- a.*² Smaller, head and body 3 to 4 inches in length.
- c.* Tail without hair, more than $1\frac{1}{2}$ times head and body.
- d.* Proximal half of the sole naked; six distinct plantar pads. ***G. nanus***, p. 51.
- d.*² Sole hairy throughout; no distinct pads. ***G. gleadowi***, p. 52.
- c.*² Tail without hair, shorter than the head and body. ***G. swinhoei***, p. 52.

Gerbillus indicus.

Dipus indicus, *Hardwicke Linn. Trans.*, viii, p. 279, pl. vii (1804).

Gerbillus indicus, *Desmarest N. Dict. d'Hist. Nat.*, xiii, p. 109 (1817); *Elliot Madras Journ.*, x, p. 211; *F. Cuvier Trans. Zool. Soc.*, ii, p. 143, pl. xxv, figs. 15-19; *Hutton and Blyth J. A. S. B.*, xv, p. 137; id. *J. A. S. B.*, xx, p. 167; id. *J. A. S. B.*, xxi, p. 350; *Horsfield Cat. Mamm. E. I. Mus.*, p. 150; *Kelaart Prodr. Faun. Zeylan.*, p. 69; *Blyth J. A. S. B.*, xxxii, p. 327; *Adams P. Z. S.*, 1858, p. 520; *Blyth Cat.*, no. 353, p. 110; *Ferdon Mamm.*, p. 185; *Blanford Persia*, p. 63.

Gerbillus cuvieri, *Waterhouse P. Z. S.*, p. 56 (1838); *Hutton and Blyth J. A. S. B.*, xv, p. 139.

Gerbillus hardwickii, *Gray List Mamm. B. M.*, p. 132 (1843).

Distribution.—Found throughout India from the Himalayas southward, including Ceylon, in sandy and dry places; extending eastwards as far as Lower Bengal only and westwards to Baluchistan (Blanford).

The southern form is distinguishable as a well marked geographical race, which was described by Waterhouse in 1838 as *G. cuvieri*; it is distinguished from *G. indicus* by its longer tail,

its longer tarsus, and by the colour of the tarsus, which is blackish; the differences of the tarsus and tail of the two races are shown in the accompanying measurements. It is not easy to separate the synonymy of the two races, as the southern variety has been almost entirely overlooked hitherto; this was in consequence of the fact that Blyth's specimens from Midnapur, which he naturally

Lettering of specimen.		Tarsus.	Tail with hairs.	Body and head.
Northern race var. typicus.	t. Allahabad.	1'07	6'80	6'0
	u. Berhampore	1'10	6'75	6'5
	p. Baluchistan	1'05	6'80	5'75
Southern race var. cuvieri.	oo. Columbo .	1'25	8'30	6'25
	dd. Poona .	1'25	8'50	6'50
Inter-mediate.	z. Goona .	1'07	7'20	6'0
	bb. Banda .	1'20	7'10	6'50

considered belonged to the northern race, were really more nearly allied to the southern race.

As will be seen by the accompanying table, the varieties run into one another in the Central Provinces.

Var A.—typicus.

a-b. 2 Skins	♀	Pishin, Persian Baluchistan, 10-2-72.	W. T. Blanford.
c-d. 2 Skins, 2 skulls.		Agra district	Agra Museum.
e-g. 3 Skins, 1 skull.		Maunbhoom	Mus. Collector (1866).
h-l. 4 Skins juv.		"	Mus. Collector (1866).
m. Skin ♂		" 12-64	R. C. Beavan.
n. Skin		Berhampore	W. Theobald, A.S.B.
o-q. 3 Alc. ♂ ♂ ♀		Pishin, Baluchistan, 700 feet.	W. T. Blanford.
r. Alc. ♀		Rajampur, Punjab	E. Saunders.
s. Alc. juv. ♀		Cutch	F. Stoliczka
t. Alc. ♀		Allahabad	J. Cockburn (1872).
u. Alc. 1 skull ♀		Berhampore, Bengal	W. Theobald, A.S.B.
v. Skeleton mtd.		Berhampore	W. Theobald, A.S.B.
w-x. 2 Skulls		"	A.S.B.
y. Skull		Berhampore	A.S.B.
z. Skull ♂		Pishin, Baluchistan	W. T. Blanford.
a ² -b. ² 2 Alc. ♂ ♀		Sitapur, Oude	A. Barclay.
c ² -d. ² 2 Alc. juv.		"	A. Barclay.
e. ² Alc. ♀		Gulistan, "Afghanistan"	J. A. Murray.
f. ² Alc. ♀		Kirta	J. A. Murray.
g. ² Alc. juv.		Beebeenanee, Beluch	J. A. Murray.

Var B.—cuvieri.

1-b. 2 Skins, 2 skulls.	Nilgiris, Madras	R. H. Beddome.
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<i>c-d.</i> 2	Skins,	Trichinopoly, Madras	R. H. Beddome.
	2 skulls	juv.	
<i>e-f.</i> 2	Alc.	Goona, C. I.	A. Barclay.
<i>g.</i>	Alc.	♂ Banda dist., N.-W.P.	J. Cockburn.
<i>h.</i>	Alc.	juv. Karachi?	Karachi Mus.
<i>k.</i> 2	Alc.	♂ ♀ Poona	G. W. Vidal.
<i>f-o.</i> 4	Alc. juv. ♀	Codur Hills, Madras	R. H. Beddome.
<i>p-q.</i> 2	Alc. juv. ♀	Madras	G. Bidie.
<i>r-s.</i> 2	Alc.	Madras?	Madras Mus.
<i>t-w.</i> 4	Skulls	♀ Columbo	J. Anderson (1872).
	3 juv.		
<i>x-b</i> ² .	5 Stuffed	Midnapore Jungles	E. Blyth A.S.B.
<i>c</i> ² .	Stuffed	Midnapore	Dr. Young (1848)) A.S.B.
<i>d</i> ³ - <i>e</i> ² .	2 Stuffed	South India.	Sir W. Elliot (1843) A.S.B.
<i>f-g</i> ² .	2 Stuffed	Ceylon	E. L. Layard (1858) A.S.B.
<i>h</i> ² .	Skull	Columbo	J. Anderson (1872).

Gerbillus persicus.

Gerbillus persicus, *Blanford Ann. Mag. N. N.* (4), xvi, p. 312 (1875); *id. Persia*, p. 66, pl. vii, fig. 1.

Distribution.—Persian plateau north and south.

This species is allied to *G. indicus*; it is distinguished by its dusky greenish soles, the absence of the dark line below the tail, and by its skull. In *G. indicus* the part of the skull above the foramen magnum when viewed from behind exceeds in height the vertical extent of the foramen magnum itself; in *G. persicus* the reverse holds good. The specimen "c" in the list below has a hairy tarsus and is doubtfully referred to *G. persicus*.

a. Alc. skull Kohrud, N. of Ispahan W. T. Blanford.
[Type of the *G. persicus*, Blanford.]

b. Alc. juv. Karman, S. Persia W. T. Blanford.
c. Alc. skull juv. " " " W. T. Blanford.

Gerbillus erythrurus.

Gerbillus erythrurus, *Gray Ann. Mag. N. H.*, x, p. 266 (1842); *Hutton* *J. A. S. B.*, xv, p. 139; *Horsfield Cat. E. I. Mus.*, p. 150; *Blanford Persia*, p. 70; *Danford and Alston, P. Z. S.*, 1880, p. 60.
Gerbillus sp., *Scully J. A. S. B.*, lvi, p. 71 (1887).

Distribution.—Afghan Turkistan and Afghanistan proper extending south to Kandahar and west to South Persia.

There seems to be no reason why the Balkh Gerbille should not be referred to *G. erythrurus*; the skin agrees very well with those of this species in the Museum and the skull has the same extraordinarily inflated tympanic bulla so characteristic of *G. erythrurus*, and also resembles it in other respects.

a. Skin and skull ♂ Shiraz, 4,720 ft. Sir O. St. John.
b. Skin Afghanistan (Griffiths) India Mus., London.

- c. Skin, skull ♀ Balkh, Afghan Turkes- C. E. Yate.
tan, 4-7-86.
d-e. 2 Stuffed, 1 Shiraz, 4,720 ft. Sir O. St. John.
skull.
f-g. 2 Alc. ♂ Muskaff, Beluchistan J. A. Murray.

Gerbillus meridianus.

- Mus meridianus, *Pallas Reise*, ii, p. 702 (1773)*.
Mus longipes, *Pallas Nov. Sp. Quad. e Glir.*, pp. 88, 314, pl. xviiiB (1778).
Dipus longipes, *Schreber Säugeth.*, iv, p. 856 (1792).
Dipus meridianus, *Pallas Zoogr. Ross. As.*, p. 182 (1831).
Meriones meridianus, *Lichtenstein in Evers. Reise nach Buchara*, p. 122 (1823); *Radde Zool. f. B.*, iv, p. 1047.
Rhombomys meridianus, *Wagner Schreb. Säugeth. Suppl.*, iii, p. 492 (1843).
Meriones fulvus, *Eversmann Bull. Nat. Mosc.*, xxi, pt. 1, p. 195 (1848).
Gerbillus brevicaudatus, *apud A. Milne Edwards, Ann. Sci. Nat.* (5), vii, p. 377 (1867).
Gerbillus psammophilus, *Milne Edwards Rech. Mamm.*, p. 144, pl. xa, fig. 1, pl. xi, figs. 3, 4 (1868).
Gerbillus cryptorhinus, *Blanford f. A. S. B.*, xliv, p. 108 (1875); *id. Yarkand Mamm.*, p. 56, pls. x, xB, fig. 5.
Gerbillus meridianus, *Büchner Wiss. Result. Przewalski Reisen Rodentia*, p. 57 (1889).

Distribution.—The whole desert region of Central Asia from the north of Peking to Yarkand; also the country round the Caspian sea.

The above synonymy is copied from Büchner's account of Przewalski's Mammals; Büchner believes that the curious semi-circular flap over the nose which was the character chiefly relied on by Blanford in distinguishing the Yarkand species, *G. cryptorhinus*, is purely artificial and can be easily produced by immersing the fresh animal in alcohol (cf. *Lataste Actes Soc. Linn. Bordeaux*, xxxix, p. 267, 1885); he therefore identifies *G. cryptorhinus* with *M. meridianus* of Pallas.

- a. Skin Kargalik, Yarkand F. Stoliczka.
[Type of *G. cryptorhinus*, Blanford.]
b-e. 4 Skins, 2 skulls Kargalik, Yarkand, F. Stoliczka.
5-11-73.
f. Skin Yarkand, 20-5-74 F. Stoliczka.
g-j. 3 Skins Yangihissar, Yarkand, F. Stoliczka.
4-74.
k. Skin Yarkand F. Stoliczka.
l. Alc. skull Yarkand F. Stoliczka.
[Co-type of *G. cryptorhinus*, Blanford].
m-n. 2 Alc. Turkestan C. Ellis.

Gerbillus hurrianæ.

- Gerbillus hurrianæ*, *Ferdon Mamm.*, p. 186 (1867); *Blanford Persia*, p. 68; *Murray Zool. Sind*, p. 43.
Gerbillus erythourus, *apud Ferdon Mamm.*, p. 185 (1867).

Distribution.—Afghanistan and Baluchistan, extending eastwards into Sind and the Punjab as far as Agra.

a. Skin		Afghanistan (Griffith)	India Mus., London.
b. Skin	♀	Dasht, Baluchistan,	W. T. Blanford.
		30-1-72.	
c-d. 2 Skins	♀	Bahu Kalat, Baluchistan,	W. T. Blanford.
		2-2-72.	
e-f. 2 Skins		N. W. of Sehwan, Sind,	W. T. Blanford.
		14-2-75.	
g. Skin		Hissar dist., Punjab	T. C. Jerdon.
h-j. 2 Skins		Agra dist., N.-W. P.	Agra Mus.
k-l. 2 Alc. 1 skull		Dasht R., Baluchistan	W. T. Blanford.
	♂ ♀		
m. Alc. skull	♂	" " "	W. T. Blanford.
n. Alc.	♂	Pishin, Baluchistan	W. T. Blanford.
o-q. 3 Alc.,	♀	Karachi	Karachi Museum.
	1 skull.		
r-s. 2 Alc.	♂	" "	Karachi Museum.
	1 skull.		
t-u. 2 Alc.	♂ ♀	" "	Karachi Museum.
v-y. 4 Alc.	♀ ♂	Khirabad nr. Attock,	A. Barclay.
	2 juv.	Punj.	
z. Stuffed		Agra dist.	A. C. Carlyle (1870).
a ² . Stuffed juv.		" "	Agra Mus. (1870).
b ² . Skeleton	♀	Sind	W. T. Blanford.
c ² -e ² . 3 ¹ Alc. 1 skull		Thar and Parkar district,	J. A. Murray.
		Sind.	
f ² . Skin		Beebeenanee, Baluch.	J. A. Murray.
g ² . Alc.	♀	Sibi	J. A. Murray.
h ² -j ² . 2 Alc.		Thar and Parkar dist.,	J. A. Murray.
		Sind.	
k ² -l ² . 2 Alc.	♀ ♂	Sibi	J. A. Murray.
m ² . Alc.	♂	Beebeenanee	J. A. Murray.
n ² -p ² . 3 Alc.		Jeysulmere, Rajpt.,	N. Belletty.
		23-2-90.	

Gerbillus nanus.

Dipus gerbillus, *Blanford Abyssinia*, p. 284 (1870).

Gerbillus nanus, *Blanford Ann. Mag. N. H.* (4), xvi, p. 312 (1875); *id. Persia*, p. 72, pl. v, fig. 1.

Distribution.—Baluchistan and Abyssinia.

Mr. Thomas has kindly examined the Abyssinian specimens named by Blanford, *Dipus gerbillus* Oliv., and has pronounced them indistinguishable from *Gerbillus nanus* of Persia also discovered and named by Blanford.

a. Alc. skull Saman, Dasht, Baluchis- W. T. Blanford,
tan.

[Type of *G. nanus*, Blanford.]

b-e. 4 Alc. & skulls Zoulla, Annesley Bay, W. T. Blanford.
2 ♂ 2 ♀ Abyssinia.

<i>f-g.</i> 2 Skins	♂	Zoulla, Annesley Bay, Abyssinia	W. T. Blanford.
<i>h.</i> Alc.	♂	Gulistan, Afghanistan	J. A. Murray.
<i>j.</i> Alc.	♀	Muskaff, Baluchistan	J. A. Murray.

Gerbillus gleadowi.

Gerbillus gleadowi, *Murray Ann. Mag. N. H.* (5) xvii, p. 246 (1886).

Distribution.—Sind and Rajputana.

The first examples of this species were collected in the Rohri District of Upper Sind; the species appears to be closely allied to *G. nanus* from which it differs chiefly in having hairy instead of naked palms and soles.

<i>a-b.</i> 2 Alc.	Rajputana	N. Belletty.
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Gerbillus swinhoei.

Gerbillus swinhoei, *Scully Ann. Mag. N. H.* (5) viii, p. 228 (1881).

Distribution.—Afghanistan, between Kandahar and the Khojak Pass.

This species resembles *G. nanus* of Blanford; it seems however to be distinguished by its tail, which is much shorter, 3·1 inch, instead of 4·5 as in *G. nanus*, and by possessing a black pencil which is not present in the other species.

[No specimens in the Museum.]

Gerbillus pyramidarum.

Dipus pyramidarum, *Et. Geoff. St. Hil. Cat. Mamm. Mus. Paris*, p. 202 (1803)*.

Gerbillus pyramidarum, *F. Cuvier Trans. Zool. Soc.*, ii, p. 141, pl. xxv, fig. 6-9 (1841); *Lataste Act. Soc. Linn. Bordeaux* (4) ix, p. 260.

Distribution.—Egypt.

<i>a.</i> Alc., skull	♀	Heluan, Egypt	Purchased.
<i>b.</i> Alc.	juv.	„ „	Purchased.

Gerbillus obesus.

Psammomys obesus, *Cretzschmar, Rüppell's Atlas*, p. 58, pls. xxii, xxiii, (1826); *Blyth Cat.* no. 355, p. 111.

Gerbillus robustus, *Loche Cat. Mamm. Ois. Alg.*, sp. 57 (1858)*.

Gerbillus savii, *Loche Expl. sc. de l'Alg. Mamm.*, sp. 62 (1867)*.

Gerbillus elegans, *Heuglin Reise N. O. Afrika*, ii, p. 80 (1877)*.

Psammomys rouderei, *Lataste, Le Nat.*, p. 492 (1881).

Meriones obesus, *Lataste Act. Soc. Linn. Bordeaux* (4) ix, p. 269 (1885).

Distribution.—North Africa, from Algeria to Egypt and possibly southwards to Senaar and Senegal.

<i>a.</i> Stuffed	Egypt	E. Rüppell, A.S.B.
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Genus **ISOMYS**.

Isomys, *Sundeval Kongl. Vetens. Akad. Handl.* (1842)*.

***Isomys variegatus*.**

Mus variegatus, *Is. Geoff. St. Hil. Descrip. Egypt Nat. Hist.* (1813)*
Schinz Synop. Mamm., ii, p. 157.

Isomys variegatus, *Sundeval Kongl. Vetens. Akad. Handl.* (1842)*.

Distribution.—North-East Africa.

a. Alc. ♂ Cairo, Egypt Purchased.

Genus **NESOKIA**.

Nesokia, *Gray Ann. Mag. N. H.*, x, p. 265 (1842); *Type*, *N. hardwickii*.
Spalacomys, *Peters Abhand. Akad. Berlin*, p. 139 (1860). *Type*, *N. hardwickii*.

The genus was first put into its present form by Anderson (J. A. S. B., xlvii, p. 214), the number of species, however, recognised by Anderson were subsequently considerably reduced by Thomas (P. Z. S., 1881, p. 521), and it is the latter author who has been followed in compiling this catalogue.

Synopsis of Indian species.

- a. Anterior palatine foramen shorter than the molar series; mammae, 8; tail, about equal to body without head; head and body, 6 to 7 inches long. **N. hardwickii**, p. 53.
- a². Anterior palatine foramen equal to the molar series and considerably narrowed posteriorly; mammae, 14-18; head and body 7 to 8 inches long. . **N. bengalensis**, p. 55.
- a³. Anterior palatine foramen as in *N. bengalensis*, but rather more open behind; mammae, 12.
- b. Head and body about 12 inches; back with long harsh black piles. . . **N. bandicota**, p. 57.
- b². Head and body 9 to 11 inches; black piles not so numerous or conspicuous. . . **N. nemorivagus**, p. 58.

***Nesokia hardwickii*.**

Arvicola indica, *Gray Illustr. Ind. Zool.*, i, pl. xi (1832) [*nec Mus indicus* *Bech.*]

Mus hardwickii, *Gray Charlesw. Mag. N. H.*, i, p. 585 (1837); *Blyth J. A. S. B.*, xxxiv, p. 193.

Nesokia hardwickii, *Gray Ann. Mag. N. H.*, x, p. 265 (1842); *Ferdon Mamm.*, p. 190; *Thomas P. Z. S.*, 1886, p. 56; *Radde Zool.*, *J. B.*, iv, p. 1035.

- Mus huttoni*, *Blyth J. A. S. B.*, xv, p. 139 (1846).
Nesokia griffithii, *Horsfield Cat. E. I. Mus.*, p. 145 (1851); *Blyth J. A. S. B.*, xxxii, p. 332.
Nesokia huttoni, *Blyth J. A. S. B.*, xxxii, p. 332 (1863); *Blanford Persia*, p. 59, pl. vi, fig. 1.
Spalacomys indica, *Peters Abhandl. Akad. Berlin*, p. 143, pl. ii, fig. 1, [skull] (1860).
Mus (Nesokia) hardwickii, *Anderson J. A. S. B.*, xlvii, p. 221 (1878); *Thomas P. Z. S.*, 1881, p. 524; *Murray Zool. Sind*, p. 44.
Mus (Nesokia) huttoni, *Anderson J. A. S. B.*, xlvii, p. 223 (1878).

Distribution.—The north-western part of India, extending westwards through Sind to Baluchistan, Afghanistan and Transcaspia, and eastwards as far as Purneah in Bengal.

An examination of the examples of this species in the Indian Museum shows that it is not possible to separate the two so-called species *Nesokia hardwickii* and *Nesokia huttoni* even as geographical races; of the specimens in the Museum from Sind, some have the soft fur of the typical *N. huttoni* form, some the harsh fur of *N. hardwickii*; it is perhaps possible that this character may be due to the season, and that the animal acquires the soft woolly fur in the winter and the harsh fur in the summer; in the localities where this species is found, the extremes of heat and cold are very great, and this would perhaps favour this suggestion.

a. Skin, skull	Fatehgarh, N.-W. P.	A. Anderson, 1872.
b-d. 3 Skins, 2 skulls.	Sitapur, Oudh	A. Barclay.
e. Alc., skull ♂	Shahbandar, Sind, 3-5-76.	W. T. Blanford.
f. Alc., skull ♀	Khipra, Thar dist., Sind.	W. T. Blanford.
g-j. 3 Alc. ♀	Karachi	Karachi Mus. [Ex.]
k-u. 11 Alc., 7 skulls 1 ♂ 10 ♀	Fatehgarh, N.-W. P.	A. Anderson, 1872.
v. Alc., skull ♀	Purneah, Bengal	J. Anderson.
w. Alc. ♀	Karachi	Karachi Mus.
x. Skin, skull ♂	Kalagan, Baluchistan, 12-3-72.	W. T. Blanford.
y. Skin, skull	Umballa, Pjb.	R. C. Tytler.
z. Stuffed, skull	Umballa, Pjb.	R. C. Tytler.
a ³ -d ² . 4 Alc., 1 skull ♂ ♂ ♀ ♀	Dakka, Afghan	A. Barclay.
e ² . Alc. ♀	Thal, Kurram Valley, Afghan.	A. Barclay.
f ² . Alc. ♀	Hassan Abdal, Rawal- pindi, Pjb.	A. Barclay.
g ² . Alc. ♀	Quetta	Sir O. St. John.
h ² -m ² . 5 Alc. 1 skull 3 ♂ 2 ♀ juv.	Kalagan, Baluchistan	W. T. Blanford.

Nesokia sculleyi.

Nesokia sculleyi, *Wood Mason, P. A. S. B.*, p. 80 (1876); *Anderson J. A. S. B.*, xlvii, p. 224; *Blanford Yarkand Mammals*, p. 49, pl. viiia, and xa, fig. 2.

† *Nesokia brachyura*, *Büchner Result. Wiss. Przewalski Reisen, Rodentia* p. 82, pls. x, xi, fig. 1-9 (1889).

Distribution.—Has been found hitherto only in Kashgaria, at Sanju to the south of Yarkand.

This species is distinguished from *Nesokia hardwickii* only by its much longer hind-foot and its somewhat larger skull; another species has been recently described by Buchner (see above) as *Nesokia brachyura*; it is distinguished from *N. scullyi* and *N. hardwickii* by its size, its very short tail and its small hind-foot, notwithstanding this it is very possible that they would be found to be the same species on comparison of the types.

a. Skin, skull ♂ Sanju, E. Turkestan, J. Scully.
11-8-75.

[Type of *N. scullyi*, Wood Mason.]

b-c. 2 Skins E. Turkestan C. Ellis.

Nesokia bengalensis.

Var. A.—typicus.

Arvicola bengalensis, *Gray Illustr. Ind. Zool.*, ii, pl. xxi (1833-4).

Mus daccaensis, *Tytler Ann. Mag. N. H.* (2), xiv, p. 173 (1854).

Mus tarayensis, *Horsfield Ann. Mag., N. H.* (2), xvi, p. 112 (1855); *Gray Cat. Hodgs. Coll.*, 2nd ed., p. 10.

Mus plurimammis, *Horsfield Ann. Mag., N. H.* (2), xvi, p. 112 (1855); *Gray Cat. Hodgs. Coll.*, 2nd ed., p. 10; *Blyth J. A. S. B.*, xxxiv, p. 193; *Ferdon Mamm.*, p. 196.

Mus morungensis, *Horsfield Ann. Mag., N. H.* (2), xvi, p. 112 (1855); *Gray Cat. Hodgs. Coll.*, 2nd ed., p. 10.

Nesokia indica, *apud Blyth J. A. S. B.*, xxxii, p. 328 (1863); *Blyth Cat. no. 360*, p. 112; *Ferdon Mamm.*, p. 187; *Theobald P. A. S. B.*, 1866, p. 240; *Swinhoe P. Z. S.*, 1870, p. 635; *Blyth J. A. S. B.*, xlv, *Burma List*, p. 38.

Mus (*Nesokia*), *blythianus*, *Anderson J. A. S. B.*, xlvii, p. 227, pl. xiii, figs. a-d (1878).

Mus (*Nesokia*), *barclayanus*, *Anderson J. A. S. B.*, xlvii, p. 229, pl. xiii, figs. i-l (1878); *Blanford Yarkand Mamm.*, p. 46, pl. xa, fig. 1.

Mus (*Nesokia*) *bengalensis*, *Thomas P. Z. S.*, p. 526 (1881); *Murray Zool. Sind*, p. 44; *Anderson Journ. Linn. Soc.*, xxi, p. 341.

Var. B.—kok.

Mus kok, *Gray Charlesw. Mag. N. H.*, i, p. 585 (1837) *Kelaart Prodr. Faun. Zeylan.*, p. 66.

Mus (*Neotoma*) *providens*, *Elliot Madr. Journ.*, x, p. 209 (1839).

Mus dubius, *Kelaart Journ. Ceylon As. Soc.*, v, p. 217 (1850).

Mus hardwickii, *apud Kelaart Prodr. Faun. Zeylan.*, p. 65 (1852).

Mus (*Nesokia*) *providens*, *Anderson J. A. S. B.*, xlvii, p. 225, pl. xiii, figs. e-h (1878).

The Mole Rat; Canarese, Kok; Telugu, Golatta koku; Bengali, Yenkrail.

Distribution.—This rat is found over the whole of India, from Kashmir and Sind in the north-west and from Cachar in the north-east southwards; it is also recorded from Ceylon and Tenasserim, and probably occurs throughout Burma.

Anderson considered that the forms from North-Western India and from Southern India and Ceylon, were both specifically distinct from the form found in Bengal and Cachar; Thomas has shewn rightly that there are no reasonable grounds for such subdivision. As, however, the southern form is considerably smaller, it has been kept separate both in the synonymy and list as a geographical race.

Var. A.—typicus.

a. Skin	Srinagar, Kashmir.	F. Stoliczka.
b. Skin, skull	" " 4-8-73	F. Stoliczka.
c. Skin	" " 2-8-73	F. Stoliczka.
d. Skin	" " 2-8-73	F. Stoliczka.
e. Skin	" " 2-8-73	F. Stoliczka.
f. Skin, skull	Agra, N.-W. P.	A. C. Carlyle, 1870.
g. Skin, skull	Ahmednagar, Bm.	?
h. Skin, skull	♂ Manbhoom, 28-12-64	R. C. Beavan
j. Skin, skull	" "	Mus. Coll., 1866.
k. Skin, skull	♂ Calcutta, 1-6-76	O. L. Fraser.
l. Skin, skull	" 30-5-76	O. L. Fraser.
m. Skin, skull	" 7-6-76	O. L. Fraser.
n. Skin, skull	♀ " 5-5-76	O. L. Fraser.
o. Skin, skull	♂ " 31-5-76	O. L. Fraser.
p. Skin, skull	Gauhati 7-70	Mus. Coll.
q. Skin, skull	Cachar	Mus. Coll., 1867.
r. Skin	"	Mus. Coll., 1867.
s. Skin	"	Mus. Coll., 1867.
t. Skin	♀ Mergui 14-12-81	J. Anderson.
u. Skin, skull	♂ " 17-12-81	J. Anderson.
v. Skin, skull	♀ " 14-12-81	J. Anderson.
w. Skin, skull	♂ " 14-12-81	J. Anderson.
x. Skin	♂ " 17-12-81	J. Anderson.
y. Skin, skull	♀ " 12-12-81	J. Anderson.
z. Skin, skull	♂ " 13-12-81	J. Anderson.
a ² .b ² . 2 Stuffed,	Manbhoom	Mus. Coll.
2 skulls.		
c ² .e ² . 3 Stuffed	Calcutta	E. Blyth, A.S.B.
f ² .j ² . 4 Stuffed	Midnapore	E. Blyth, A.S.B.
k ² . Stuffed, skull	Botanical Gds., Calcutta, 1-69.	J. Anderson.
l ² . Stuffed, skull	Botanical Gds., Calcutta, 1-69.	J. Anderson.
m ² . Skull	Howrah, Calcutta	J. F. Simmons.
n ² . Alc. skull	♀ Khairpur, Sind	W. T. Blanford.
o ² .e ³ . 17 Alc.,	Fattehgarh, N.-W.P.	A. Anderson.
6 skulls.		
f ³ . Alc.	♀ Banda Dist., N.-W.P.	J. Cockburn.
g ³ .-h ³ . 2 Alc.,	♀ Ghazipur, N.-W.P.	H. Whitwell.
2 skulls.		

[Types of *N. barclayana*, Anderson.]

j^3 .	Alc., skull, ♂	Goona, C. I.	A. Barclay.
k^3-p^3 .	6 Alc., 2 ♂ 4 ♀	"	A. Masters.
q^3-s^3 .	3 Alc. ♀ ♂ ♂	Sitapur Oudh	A. Barclay.
t^3 .	Alc. skull ♂	Purneah	Mus. Coll. (1872)
u^3 .	Alc., skull ♂	Calcutta	J. Anderson.
v^3 .	Alc., skull ♂	"	E. Blyth, A.S.B.
w^3-y^3 .	3 Alc., 2 skull, ♂ ♀ ♂	"	Purchased
z^3 .	Alc.	"	Mus. Coll.
a^4-j^4 .	10 Alc., 1 skull,	Zoological Gardens, Calcutta.	Babu Sanyal.
k^4 .	Alc. ♀	Zoological Gardens, Calcutta.	J. Anderson.
l^4-m^4 .	2 Alc. ♂	Alipur nr. Calcutta	J. Anderson.
n^4-q^4 .	4 Alc., 2 skulls ♀ ♂ ♀ ♀	Botanical Gardens, Calcutta.	J. Anderson.
r^4-s^4 .	2 Alc. ♂	Kututangra nr. Calcutta.	Mus. Coll.
t^4 .	Alc.	Bogdanga, nr. Calcutta.	Mus. Coll.
u^4-w^4 .	3 Alc., 1 skull ♂	Dacca, Bengal	N. Belletty.
x^4 .	Alc. ♂	Cherrapoonjee, Assam	J. H. Bourne.
y^4 .	Alc.	Silcuri, Cachar	J. Wood Mason (1881).
z^4-c^4 .	4 Alc. ♀ 3 juv.	Hailakandi, Cachar	C. H. Dreyer.
d^5 .	Alc., skull ♀	Moulmein	Mus. Collector, 1872.
e^5 .	Alc., skull ♂	Calcutta	Purchased.

Var. B.—kok.

a .	Skin, skull ♀	Nilgiri hills	R. H. Beddome.
$b-c$.	2 Stuffed 2 skulls.	South India	Sir W. Elliot (1842), A.S.B.
$d-j$.	6 Alc. 3 ♂ 3 ♀	Madras	G. Bidie.
$k-m$.	3 Alc.	Madras Pres.	G. Bidie.
n .	Alc., skull juv.	Trichinopoly	R. H. Beddome.
o .	Alc. skull ♂	Nilgiris	R. H. Beddome.
p .	Stuffed, skull	Ceylon	E. F. Kelaart (1855), A.S.B.

Nesokia bandicota.

- Mus bandicota, *Bechstein Allgem. Uebers. der vierfüssige Thiere*, ii, p. 713, (1800)*; *Blyth J. A. S. B.*, xx, p. 167; *Horsfield Cat. E. I. Mus.*, p. 140; *Blyth J. A. S. B.*, xxxii, p. 333; *id. Cat.*, no. 359, p. 112; *Adams, P. Z. S.*, 1858, p. 520; *Ferdon Mamm.*, p. 193.
- Mus indicus, *Bechstein Allgem. Uebers. der vierfüssige Thiere*, ii, p. 714 (1800)* [nec Geoff.]
- Mus malabaricus, *Shaw Genl. Zool.*, ii, pt. 1, p. 54 (1801).
- Mus perchal, *Shaw Genl. Zool.*, ii, pt. 1, p. 54 (1801).
- Mus giganteus, *Hardwicke Linn. Trans.*, vii, p. 306, pl. xviii (1804); *Sykes P. Z. S.*, 1831, p. 103; *Gray P. Z. S.*, 1832, p. 40; *Kelaart Prod. Faun. Zeylan.*, p. 58.
- Mus (Neotoma) giganteus *Elliot, Madras Journ.*, x, p. 209 (1839).
- Mus (Nesokia) giganteus, *Anderson J. A. S. B.*, xlvii, p. 232, pl. xiv, figs. a-d (1878).
- Mus (Nesokia) bandicota, *Thomas, P. Z. S.*, p. 528 (1881); *Murray Zool. Sind*, p. 45; *Thomas P. Z. S.*, 1886, p. 56.

The Bandicoot or Pig Rat ; Sanscrit, Indur ; Hind., Ghous or Ghus ; Canarese, Heggim ; Telegu, Pandikoku ; Singalese, Oora Meeyo.

Distribution.—This rat is apparently restricted to the Indian peninsula strictly speaking (*i.e.*, south of the great alluvial plains); it also occurs commonly in Ceylon; it has frequently been reported from Calcutta, but on investigation it is usually found to be the large *Mus decumanus* or perhaps the rarer *Nesokia nemorivagus* that has been mistaken for the true bandicoot.

a. Skin	♀	Bradachellum S. of W. T. Blanford.	
		Godavery dist. 7-2-71.	
b. Skin		Ceylon (J. Mortimer, Columbo Mus.	
		29-10-81).	
c. Skin	juv.	Ceylon	E. F. Kelaart, A.S.B.
d-e. 2 Stuffed,	1	Manhoom	Mus. Coll., 1886.
		skull.	
f-g. 2 Stuffed,	1	Ceyblon	E. F. Kelaart, A.S.B.
		skull.	
h. Alc.	juv.	Goona, C. I.	A. Barclay.
j. Alc., skull	♂	" "	A. Barclay.
k-n. 4 Alc	♂	Madras	G. Bidie.
o-p. 2 Alc.	♀	"	G. Bidie.
q-t. 4 Alc.	juv.	"	G. Bidie.
u. Alc.	♂	.....	Zoological Gardens.
v-x. 3 Skulls	♂	Goona	A. Barclay.
y-z. 2 Skulls	♀	"	A. Barclay.

Nesokia nemorivagus.

Mus nemorivagus, Hodgson *J. A. S. B.*, v, p. 234 (1836); *id. Ann. Mag. N. H.*, xv, p. 266; *Horsfield Cat. E. I. Mus.*, p. 141.

Mus setifer, *Horsfield Zool. Res.*, with plate (1824); *id. Cat. E. I. Mus.*, p. 142.

Mus macropus, Hodgson *Ann. Mag. N. H.*, xv, p. 268 [juv.] (1845).

Mus bandicota, *apud Cantor J. A. S. B.*, xv, p. 253 (1846); *Blyth J. A. S. B.*, xlv, *Burma List*, p. 39; *Swinhoe P. Z. S.*, 1870, p. 635.

Nesokia hydrophila, *apud Gray Cat. Hodgs. Coll.*, 1st ed., p. 19; [*nec Hodgs.*] 1847.

Mus (*Nesokia*) *elliottanus*, Anderson *J. A. S. B.*, xlvii, p. 231, pl. xiv, figs. e-h (1878).

Mus (*Nesokia*) *nemorivagus*, Thomas *P. Z. S.*, p. 528 (1881).

Distribution.—This form seems to replace *Nesokia bandicota* in Nepal, Sikkim, Bengal and Assam; it is also recorded from Formosa, and probably extends through Burma to the Malay Peninsula and some of the islands.

a. Alc. skull	♂	Purneah, 28-5-72	J. Anderson.
b. Alc. skull	♀	juv. " "	J. Anderson.
c. Alc. skull	♂	Alipur nr. Calcutta	J. Anderson.

[The above three are co-types of *Mus* (*Nesokia*) *elliottanus*, Anderson.]

d. Alc. skull	♂	Sibsagar, Assam	S. E. Peal.
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Nesokia sp ?

Nesokia sp ? *Anderson* *J. A. S. B.*, xlvii, p. 225 (1878).

Distribution.—Muscat.

a. Alc. skull ♀ juv. Muscat, Persian Gulf, J. E. T. Aitchison.
6-4-72.

Genus MUS.

Mus, *Linnaeus Syst. Nat.*, 12th ed., i, p. 79 (1766).

In the following account of the Indian rats and mice Thomas' paper (*P. Z. S.*, 1881) has been followed with such additions as are necessary to include the few Assamese and Burmese forms not found in India proper. The key is also founded on Thomas' key.

Key of the Indian Species.

- a. Hind-foot with six well defined foot-pads.
 - b. Large four to nine inches in length, except *M. erythrotis*; proximal hind-foot pad elongated.
 - c. Whole tail covered with short hairs, upper side of tail dark; mammæ 8 to 12 in number.
 - d. Tail dark above and below.
 - e. Tail shorter than the head and body; 10 to 12 mammæ; hind-foot 1.5 to 1.7 in. ***M. decumanus***, p. 61.
 - e². Tail longer than the head and body.
 - f. Anterior edge of zygoma-root with a rounded angle above; 10 to 12 mammæ.
 - g. Large, head and body about 9 inches. ***M. bowersii***, p. 62.
 - g². Medium, head and body from 5 to 8 inches; hind-foot, 1.2 to 1.4 in. ***M. rattus* and its allies**, p. 62.
 - g³. Small, head and body between 4 and 5 inches; hind-foot, .90 in. ***M. concolor***, p. 68.
 - f². Anterior edge of zygoma-root nearly perpendicular; hind-foot .95 to 1.05. ***M. fulvescens***, p. 69.
 - d². Tail sharply bicolor, dark above, white below; mammæ 8 in number.

h. Back rufous; tail much longer than the head and body; hind-foot; 1'0 to 1'15.

M. jerdoni, p. 69.

*h*². Back yellowish grey; tail as long as head and body; hind-foot, 1'0. **M. niviventer**, p. 70.

*h*³. Back grizzled grey; rufous on rump; tail shorter than the head and body; ears tufted; hind-foot, about 1'0. **M. humei**, p. 70.

*h*⁴. Like *M. humei* but smaller, with tail longer than the head and body; head and body 2'85 inches; hind-foot, '68. **M. erythrotis**, p. 70.

*c*². Distal third of tail pure white, with longer hairs.

j. Proximal part of tail unicolorous; six mammæ; hind-foot, 1'2; tail longer than the head and body.

M. blanfordi, p. 70.

*j*². Proximal part of tail bicolor; hind-foot, 1'45; tail shorter than the head and body.

M. berdmorei, p. 71.

*b*². Small 2 to 4 inches in length; last hind-foot pad circular.

k. Anterior edge of zygoma root perpendicular or rounded.

l. Ten mammæ.

m. Tail as long as or longer than the head and body.

n. Below dark, like the back; zygomatic arches arched normally; hind-foot, '62 to '70.

M. urbanus, p. 71.

*n*². Below dark like the back; zygomatic arches incurved; hind-foot, '83.

M. sublimis, p. 73.

*n*³. Below white; zygomatic arches normal; hind-foot, '65 to '75. **M. bactrianus**, p. 74.

*m*². Tail shorter than the head and body.

M. cervicolor, p. 75.

*l*². Six mammæ; tail about as long as the head and body; hind-foot, '82 to '88. **M. arianus**, p. 75.

*k*². Anterior edge of zygoma-root slanting forwards; tail rather longer than the head and body; hind-foot '75 to '80. **M. nitulidus**, p. 76.

*a*². Hind-foot with only 4 or 5 properly developed foot-pads.

o. Larger, head and body, 4 to 5 inches; hind-foot, 1·0; generally five pads on hind foot; mammae 8 in number.

M. mettada, p. 76.

*o.*² Smaller, head and body, 3 to 4 inches; hind-foot ·70; generally four pads on hind-foot; mammae 6 in number.

M. gleadowi, p. 77.

Mus. decumanus.

Mus decumanus, *Pallas Nov. Spec. Quad. e Glir.*, p. 91 (1778); *Elliot Madr. Journ.*, x, p. 212; *Cantor F. A. S. B.*, xv, p. 254; *Gray Cat. Hodgs. Coll.*, 1st ed., p. 17; *Horsfield Cat. E. I. Mus.*, p. 140; *Kelaart Prodr. Faun. Zeylan.*, p. 59; *Blyth F. A. S. B.*, xxxii, p. 335; *id. Cat. no.* 361, p. 113; *Ferdon Mamm.*, p. 195; *Stoliczka, F. A. S. B.*, xli, p. 228; *Blanford Persia*, p. 53; *Blyth F. A. S. B.*, xliv, *Burma List*, p. 39; *Thomas P. Z. S.*, 1881, p. 532; *Murray Zool. Sind*, p. 46; *Radde Zool. F. B.*, iv, p. 1033.

Mus decumanoides, *Hodgson, F. A. S. B.*, x, p. 915 (1841) [pt.]

Mus brunneus, *Hodgson Ann. Mag. N. H.*, xv, p. 266 (1845); *Horsfield Cat. E. I. Mus.*, p. 142; *Blyth F. A. S. B.*, xxxiv, p. 193; *Ferdon, Mamm.*, p. 198. [pt.].

The Norway or Brown Rat; Canarese, Manei ilei; Hind., Choocha or Ghurka chooha; Malay, Tikus; Singalese, Gaval Meeyo; Bengalee, Demsa indur.

Distribution.—This almost universally distributed rat has not apparently made its way very far from the coast as yet. With the exception of some from Samagooting in Assam, and the identification of these seems a little doubtful, all our specimens are from sea coast towns

<i>a.</i> Skin	♂	Bushire, Persian Gulf	W. T. Blanford.
<i>b.</i> Skin, skull	♂	Calcutta, 3-6-76	O. L. Fraser.
<i>c.</i> Skin, skull	♀	" 8-5-76	O. L. Fraser.
<i>d-f.</i> 3 Skins, skulls	♀ ♀ ♂	"	O. L. Fraser.
<i>g-j.</i> 3 Skins,		Samagooting, Assam	J. Butler, 1872.
2 skulls.			
<i>k.</i> Alc.	♀	Gwadar, Baluchistan	W. T. Blanford.
<i>l.</i> Alc., skull	♀	Karachi	Karachi Mus.
<i>m.</i> Alc.	♂	Sind	Karachi Mus.
<i>n.</i> Alc.	♂	Sind	J. A. Murray.
<i>o.</i> Alc.	♂	Karachi	J. A. Murray.
<i>p.</i> Alc.	♀	.....	Karachi Mus.
<i>q.</i> Alc., skull	♂	Kyd Street, Calcutta	O. L. Fraser.
<i>r.</i> Alc., skull	♂	Wood Street, Calcutta	J. Waterhouse.
<i>s.</i> Alc.	♂ juv.	Park Street, Calcutta	J. Wood Mason, 1870.
<i>t.</i> Alc., skull	♂	Calcutta	J. Anderson.
<i>u.</i> Alc.	juv.	"	J. Anderson.
<i>v.</i> Alc., skull	♀	"	O. L. Fraser.
<i>w.</i> Alc., skull	♂	"	Purchased.
<i>x.</i> Alc.	♀	"	Purchased.
<i>y.</i> Alc., skull	♀	"	Purchased.

z. Alc.	♀	Calcutta	Purchased.
a ² . Alc.	♂	Zoological Gardens Calcutta.	J. Anderson.
b ² . Alc.	♀	" "	J. Anderson.
c ² . 9 Alc. foetal		Calcutta	J. Anderson.
d ² . Alc.	juv.	[with distorted teeth]	J. Morgan (1862), A.S.B.
e ² -f ² . 2 Alc.,		Madras	Madras Mus.
	2 skulls.		
g ² . Alc., skull	♂	Andaman Isles	G. E. Dobson.
h ² -j ² . 2 Alc.	♂	London	A. D. Bartlett.
	1 skull.		
k ² -m ² . 3 Alc.	♀	London	A. D. Bartlett.
	1 skull.		
n ² -p ² . 3 Stuffed	♂	Calcutta	E. Blyth, A.S.B.
	2 juv.		
q ² . Stuffed	♂	"	E. Blyth, A.S.B.
r ² . Stuffed		"	W. Rutledge, 1870.
	[albino].		
s ² . Stuffed skull		"	Mus. Coll., 1873.
	[albino].		
t ² -u ² . 2 Stuffed,		Andaman Isles	R. C. Tytler, 1874.
	1 skull ♂		

[Types of *Mus tytleri*, Tytler.]

v ² . Stuffed		China	R. Swinhoe, A.S.B.
w ² . Skull		.....	A.S.B.
x ² -y ² . 2 Alc. ♂ juv.		Andamans	J. Anderson, 1867.
z ² . Skelet. mtd.		.....	No history, A.S.B.
a ³ . Skin		Deccan (Sykes)	India Mus., London.
b ³ . Alc.	♀	Kobe, Japan, 3-7-84	J. Anderson.
c ³ -d ³ . 2 Alc.	♀ ♂	Yezo, Japan, 9-84	J. Anderson.
e ³ . Alc.	juv.	Kiga, Japan, 5-84	J. Anderson.

Mus bowersii.

Mus bowersii, *Anderson Anat. Zool. Res.*, p. 304, pl. xvii (1878); *Thomas P. Z. S.*, 1886, p. 62.

Distribution.—Kakhyen hills near Bhamo in Upper Burma, also recorded from Manipur by Thomas.

a. Alc., skull ♀ Hotha, Kakhyen hills J. Anderson.

[Type of *Mus bowersii*, Anderson.]

Mus rattus.

Var. A—typicus.

Mus rattus, *Linnaeus Syst. Nat.* 12th ed., i, p. 83 (1766); *Elliot Madras Journal*, x, p. 212; *Kelaart Prodr. Faun. Zeylan.*, p. 58; *Blyth J. A. S. B.*, xxxii, p. 338; *id. Cat. no. 362*, p. 113; *Ferdon Mamm.*, p. 194; *Blanford Persia*, p. 53.

Var. B—alexandrinus.

Mus alexandrinus, *Is. Geoff. St. Hil. Descript. de l'Egypte Hist. Nat.*, ii.

- p. 733, *Atlas*, pl. v, fig. 1 (1812); *Scully P. Z. S.*, 1881, p. 204; *Thomas P. Z. S.*, 1881, p. 533; *Murray Zool. Sind*, p. 46.
Mus asiaticus, *Gray Charlesw. Mag. N. H.*, i, p. 585 (1837); *Blyth J. A. S. B.*, xxxiv, p. 193.
Mus arboreus, *Horsfield Cat. E. I. Mus.*, p. 141 (1851).
 ? *Mus crassipes*, *Blyth J. A. S. B.*, xxviii, p. 295 (1859); *Ferdon Mamm.* p. 204.

Var. C—nitidus.

- Mus nitidus*, *Hodgson Ann. Mag. N. H.*, xv, p. 267 (1845); *Gray Cat. Hodgs. Coll.*, 1st ed., p. 18; *Blyth J. A. S. B.*, xxxii, p. 343; *id. Cat.* no. 368, p. 116; *Ferdon Mamm.*, p. 201.
Mus pyctoris, *Hodgson Ann. Mag. N. H.*, xv, p. 267 (1845); *Gray Cat. Hodgs. Coll.*, 1st ed., p. 17.
 ? *Mus rattoides*, *Hodgson Ann. Mag. N. H.*, xv, p. 267 (1845).
Mus horeites, *Hodgson Ann. Mag. N. H.*, xv, p. 268 (1845).
Mus aequicaudalis, *Hodgson Ann. Mag. N. H.* (2) iii, p. 203 (1849); *Horsfield Cat. E. I. Mus.*, p. 144; *Gray Cat. Hodgs. Coll.*, 2nd. ed., p. 10.
Mus alexandrinus nitidus, *Thomas P. Z. S.*, p. 533 (1881).

Var. D—rufescens.

- Mus indicus*, *Desmarest Mamm.*, ii, p. 299 (1822) [*nec Bechstein*].
Mus rufescens, *Gray Charlesw. Mag. N. H.*, i, p. 585 (1837); *Cantor J. A. S. B.*, xv, p. 254; *Blyth J. A. S. B.*, xx, p. 168; *id. J. A. S. B.*, xxxii, p. 340; *id. Cat.* no. 367, p. 115; *Ferdon Mamm.*, p. 199; *Anderson J. Linn. Soc.*, xxi, p. 340.
Mus flavescens, *Elliot Madras Journ.*, x, p. 214 (1839); [*nec Waterhouse*] *Kelaart Prodr. Faun. Zeylan.*, p. 61; *Horsfield Cat. E. I. Mus.*, p. 142.
Mus decumanoides, *Hodgson J. A. S. B.*, x, p. 915 (1841) [pt.].
Mus brunneusculus, *Hodgson Ann. Mag. N. H.*, xv, p. 267 (1845); *Horsfield Cat. E. I. Mus.*, p. 143.
Mus nemoralis, *Blyth J. A. S. B.*, xx, p. 168 (1851); *Kelaart Prodr. Faun. Zeylan.*, p. 63; *Blyth J. A. S. B.*, xxxii, p. 340; *id. J. A. S. B.*, xxxiv, p. 193.
Mus tetragonurus, *Kelaart Journ. Ceylon As. Soc.*, v, p. 217 (1850).
Mus kandianus, *Kelaart Journ. Ceylon As. Soc.*, v, p. 212 (1850); *Blyth J. A. S. B.*, xx, p. 169.
Mus ceylonus, *Kelaart Journ. Ceylon As. Soc.*, v, p. 213 (1850); *id. Prodr. Faun. Zeylan.*, p. 61.
Mus robustulus, *Blyth J. A. S. B.*, xxviii, p. 294 (1859); *id. J. A. S. B.*, xxxii, p. 342; *id. Cat.* no. 364, p. 114; *Theobald P. A. S. B.*, 1866, p. 240; *Blyth J. A. S. B.*, xlv, *Burma List*, p. 39; *Blanford J. A. S. B.*, xlvii, p. 165.
 ? *Mus infralineatus*, *Elliot, Blyth J. A. S. B.*, xxxii, p. 348 (1863); *id. Cat.* no. 371, p. 116.
Mus sladeni, *Anderson Anat. Zool. Res.*, p. 305 (1878).
Mus yunnanensis, *Anderson Anat. Zool. Res.*, p. 306 (1878).
Mus alexandrinus rufescens, *Thomas, P. Z. S.*, p. 533 (1881).
Mus rattus rufescens, *Thomas P. Z. S.*, pp. 57, 71 (1886).

Var. E—andamanensis.

- Mus andamanensis*, *Blyth J. A. S. B.*, xxix, p. 103 (1860); *id. J. A. S. B.*, xxxii, p. 340; *id. Cat.* no. 363, p. 114.
 ? *Mus palmarum*, *Zebebor Säugeth. Novara Reise*, p. 26 (1868).

The Black Rat or Tree Rat ; Bengalee, Gachua indur ; Singalese, Ghasmeeyo.

Distribution.—The typical Black Rat is found all over Northern Europe and Western Asia ; it has been, however, almost entirely displaced by the Brown Rat (*Mus decumanus*) in England and on those parts of the continent which are within easy access of the sea ; it is also found in most of the seaport towns all over the world, but here also the Brown Rat struggles for existence with it.

The Alexandrine Rat (*Mus rattus alexandrinus*) is merely a southern variety of the Black Rat, distinguished by its softer and reddish or greyish fur, and usually by its white belly ; it is found in southern Europe, Egypt and Palestine and specimens identical with it have been got from Gilgit.

The Tree Rat (*Mus rattus rufescens*) is a smaller variety of the Alexandrine Rat and is spread all over India, Ceylon, Assam and Burma, extending as far south as Mergui at any rate.

The Hill Rat (*Mus rattus nitidus*) is a rather short-tailed variety which is found in Nepal and Sikkim only.

The Andamanese variety of *Mus rattus* is distinguished from the ordinary *Mus rattus rufescens* of India by its spiny fur, a character which has been shown by Thomas not to be of even specific value, and also by its slightly larger size as is shown by the following measurements taken from the two original skins :—head and body : 7·10 to 7·30 ; tail, 6·65 ; hind-foot, 1·40 ; a typical *Mus rattus rufescens* measures, head and body, 5·70 ; tail, 6·70 ; hind-foot, 1·20.

No distinction except that of size can be found between the skulls of the several varieties of *Mus rattus*, and it is often difficult without a knowledge of the locality to say to which variety a particular individual of this species should be referred so much do they run into one another.

Var. A.—typicus.

a. Skin	♂	Resht on Caspian sea	Sir O. St. John.
b. Skin	♀	" "	Sir O. St. John.
c. Skin	♂	" "	Sir O. St. John.
d. Skin		England	Oxford Mus. Ex.
e. Skin		"	Oxford Mus. Ex.
f. Skin		"	Oxford Mus. Ex.
g-h. 2 Stuffed		From a ship in the Hooghly.	Capt. Godfrey, A.S.B.
j-l. 3 Stuffed		France	A. Malherbe (1849), A.S.B

Var. B.—alexandrinus.

a. Skin, skull		Gilgit	4-78	J. Biddulph.
b. Skin, skull		Chitral	5,000 ft., 23-10-85	G. M. Giles.
c. Skin	♂	Gilgit,	17-4-79	J. Scully.
d. Skin, skull	♂	"	10-5-79	J. Scully.
e. Skin	♂	"	15-8-79	J. Scully.

<i>f.</i> Skin	♂	Gilgit, 9-11-79	J. Scully.
<i>g.</i> Skin	♀	" 16-4-79	J. Scully.
<i>h.</i> Skin	♀	" 8-4-79	J. Scully.
<i>j.</i> Skin	juv.	" 15-8-79	J. Scully.
<i>k-o.</i> 5 Alc, 1 skull		Galari, Alexandria	J. Hand.
<i>p.</i> Alc.		Dead Sea, Palastine (Tristram).	Brit. Mus. [Ex.]
<i>q.</i> Alc.		Kashmir	Brit. Mus. [Ex.]
<i>r.</i> Alc.	♀	Gilgit	J. Scully.
<i>s.</i> Alc. juv.	♂	"	J. Scully.
<i>t.</i> Skin juv.	♂	"	J. Scully.

Var C.—rufescens.

<i>a.</i> Skin, skull		Agra.	A. C. Carllyle.
<i>b.</i> Skin, skull		Khandala, Bm.	Mus. Coll.
<i>c, d.</i> 2 Skins, 1 skull.		Chanda, C. P., 16-12-69	W. T. Blanford.
<i>e.</i> Skin	♂	" " 18-12-69	W. T. Blanford.
<i>f.</i> Skin	♂	nr. Chanda, C. P., 20-1-70	W. T. Blanford.
<i>g.</i> Skin, skull		nr. Chanda, C. P., 23-1-70	W. T. Blanford.
<i>h.</i> Skin, skull		Singhbhoom	V. Ball, 1868.
<i>j, k.</i> 2 Skins		Manbhoom, 1-65	R. C. Beavan
<i>l-o.</i> 4 Skins, 2 skulls.		Manbhoom	Mus. Coll., 1866.
<i>p.</i> Skin, skull		Gauhati, Assam, 7-70	Mus. Coll.
<i>q.</i> Skin.		Munipur	R. D. Oldham.
<i>r-s.</i> 2 Skins, 1 skull.		Naga hills	A. W. Chennell.
<i>t.</i> Skin, skull		" "	H. H. Godwin Austen.
<i>u.</i> Skin, skull	♂	Mergui, 13-12-81	J. Anderson.
<i>v.</i> Skin	♀	" 19-12-81	J. Anderson.
<i>w.</i> Skin		" 6-2-80	J. Anderson.
<i>x.</i> Skin		" 16-2-82	J. Anderson.
<i>y.</i> Skin		" 6-2-82	J. Anderson.
<i>z-a².</i> 2 Alc., 2 skulls.	♂	Rajanpur Pjb.	E. Saunders.
<i>b²-c².</i> 2 Alc.	♀	" "	E. Saunders.
<i>d²-e².</i> 2 Alc., 1 skull	♂	Karachi	Karachi Mus. [Ex.]
<i>f².</i> Alc.	♂	Sind	Karachi Mus. [Ex.]
<i>g².</i> Alc. ♂ juv.		"	Karachi Mus. [Ex.]
<i>h²-l².</i> 4 Alc., 3 skulls	♂	Fattehgarh, N.-W. P.	A. Anderson.
<i>m²-l².</i> 8 Alc., 2 skulls	♀	" "	A. Anderson.
<i>u².</i> Alc., skull	♂	Ghazipur	H. Whitwell.
<i>v².</i> Alc.	♀	Sitapur, Oude	A. Barclay.
<i>w²-z².</i> 4 Alc., 2 skulls.	♂	Benares, 1-71	Mus. Coll.
<i>a³.</i> Alc., skull	♀	Chanda, C. P., 1867	Mus. Coll.
<i>b³-c³.</i> 2 Alc.	♂ ♀	Goona, C. I.	A. Masters.
<i>d³-g³.</i> 4 Alc. ♀ 3 ♂		Poona dist., Bm.	G. W. Vidal.
<i>h³-k³.</i> 3 Alc., ♂ ♀ ♀ 3 skulls.		Madras	Madras Mus. [Ex.]
<i>l³-o³.</i> 4 Alc.	♂	"	G. Bidie.

p^3 . Alc.	♀	Madras	G. Bidie.
q^3 . Alc.	♂ juv.	"	G. Bidie.
r^3-t^3 . 3 Alc.	♂ ♀ ♂	"	G. Bidie.
u^3-w^3 . 3 Alc.	♂ ♀ ♀	Ceylon	J. Anderson.
	3 skulls.		
x^3-a^4 . 4 Alc.,	4 skulls	Nepal	Mus. Coll.
b^4-c^4 . 2 Alc.,	1 skull	Calcutta	E. Blyth, A.S.B.
	♀ & juv.		
d^4-e^4 . 2 Alc.,	♀	"	J. Anderson.
	1 skull.		
f^4-j^4 . 4 Alc.	♂	"	Purchased.
	1 skull.		
k^4-l^4 . 2 Alc.	♀	Wood St., Calcutta	J. Waterhouse.
m^4 . Alc., skull	♀	Kyd St., Calcutta	Mus. Coll.
n^4 . Alc.	♀	Dhappa, Calcutta, 1-81	Mus. Coll.
o^4 . Alc.	♂	"	R. deCruz.
p^4-r^4 . 3 Alc.,		Botanical Gardens,	J. Anderson.
	1 skull juv.	Calcutta.	
s^4-t^4 . 2 Alc.,	♂	Zoological Gardens,	J. Anderson.
	1 skull.	Calcutta.	
u^4-v^4 . 2 Alc.	♀	Zoological Gardens,	J. Anderson.
		Calcutta.	
w^4 . Alc.	♂ juv.	Zoological Gardens,	J. Anderson.
		Calcutta.	
x^4-y^4 . 2 Alc.,		Samagooting, Assam	J. Butler.
	1 skull ♂ ♀		
z^4 . Alc., skull	♀	Narainpur	"
a^5 . Alc., skull	♀	Kashia Hills	"
b^5 . 2 Alc.,	♀	Cherrapoonjee	"
	1 skull.		J. H. Bourne.
c^5-d^5 . Alc.	juv.	"	"
e^5 . 5 Alc.	juv.	"	"
f^5 . Alc., skull	♂	Pegu	J. H. Bourne.
g^5 . Alc., skull	♂	Lower Pegu	W. Theobald.
h^5 . Alc., skull	♂	Shwegyin, Tenasse-	W. T. Blanford.
		rim.	Major Berdmore, A.S.B.

[Type of *Mus robustulus*, Blyth.]

j^5 . Alc.	♀ juv.	Shwegyin, Tenasserim	Major Berdmore.
		rim.	
k^5-m^5 . 3 Alc.,	♀	"	"
	2 skulls.		Major Berdmore.
n^5 . Alc.	♀	Taing, Mergui	J. Anderson.
o^5 . Alc.	♂	Hotha, Yunan	J. Anderson.
p^5-r^5 . 3 Alc.,	♀	Hotha, Yunan	J. Anderson.
	1 skull.		
s^5-v^5 . 4 Alc.	♀ juv.	Hotha, Yunan	J. Anderson.
	2 skulls.		

[The above eight specimens are types of *Mus sladeni*, Anderson.]

w^5 . Alc., skull	♂	Momein, Yunnan	J. Anderson.
x^5-y^5 . 2 Alc.,	♂ ♀	Hotha, Yunnan	J. Anderson.
	1 skull		

[The above three are types of *Mus yunnanensis*, Anderson.]

z^5 Stuffed,	♂	nr. Chanda, C. P.	W. T. Blanford.
skull.			

α^6 . Stuffed skull	Singhbhoom	Mus. Coll., 1869.
δ^6 - c^6 . 2 Stuffed, 2 skulls.	Manbhoom	Mus. Coll.
d^6 - e^6 . 2 Stuffed	nr. Calcutta	E. Blyth, A.S.B.
f^6 . Stuffed	"	India Mus., London.
g^6 - l^6 . 5 Stuffed	"	E. Blyth, A.S.B.
m^6 - p^6 . 4 Stuffed	.....	No history, A.S.B.
q^6 - r^6 . 2 Stuffed	Ceylon	E. F. Kelaart (1851), A.S.B.
[Types of Mus. nemoralis, Blyth.]		
s^6 . Stuffed, skull.	Trincomali, Ceylon	E. F. Kelaart (1851), A.S.B.
t^6 . Stuffed, skull.	Newera Elia, Ceylon, (1851)	E. F. Kelaart (1885), A.S.B.
u^6 - x^6 . 4 Stuffed	Shwegyin, Tenasse- rim.	Major Berdmore, A.S.B.
y^6 - z^6 . 2 Skins 1 skull.	Manbhoom	Mus. Coll., 1866.
a^7 . Skin, skull	Malacca	Rev. F. Lindstedt, A.S.B.
b^7 . Skin	Pinang (Cantor)	India Mus., London.
c^7 . Skin, skull	South India	Sir W. Elliot (1841), A.S.B.
[? Type of Mus. infralineatus, Elliot MSS.]		
d^7 - f^7 . 3 Alc. ♂ ♀ 1 skull.	? Newera Elia, Ceylon	E. F. Kelaart (1851).
g^7 . Alc. juv.	Jeysulmere, Rjpt.	N. Belletty.

Var. D.—nitidus.

a . Alc., skull ♀	Nepal	Mus. Coll.
b . Alc., skull ♂	"	Mus. Coll.
c . Alc., skull ♂	"	Mus. Coll.
d . Alc., skull ♂	Darjeeling, 22-1-72	J. Gammie.
e - f . 2 Alc., ♂ 1 skull	"	G. King.
g - j . 3 Alc., ♀ 2 skulls	"	G. King.
k . Alc., juv.	"	G. King.
l - m . 2 Alc., ♂ 1 skull.	Rungbee, Darjeeling	G. King.
n - o . 2 Alc. ♀	" "	G. King.
p - r . 3 Alc. ♀	" "	G. King.
s . Alc. ♂	" "	G. King.
t - u . 2 Alc., ♀ 1 skull.	" "	G. King.
v - y . 4 Alc. ♂ juv.	" "	G. King.
z - c^2 . 4 Alc. ♀ juv.	" "	G. King.
d^2 . Alc. ♂	" "	G. King.
e^2 - f^2 . 2 Alc., ♂ ♀ 2 skulls	Sibsagar, Assam	S. E. Peal.
g^2 - h^2 . 2 Alc. juv.	" "	S. E. Peal.
j^2 . Alc., skull ♂	Munipur	R. D. Oldham.
k^2 . Alc., skull ♂ juv.	Ling Ling, Bt. Sikkim.	T. Johnston.
l^2 - m^2 . 2 Stuffed	Darjeeling	W. S. Sherwill, A.S.B.
n^2 - r^2 . 5 Stuffed	"	T. C. Jerdon, A.S.B.

s^2 . Alc., skull	♂	Ling Ling, Bt. Sikkim	T. Johnston.
	juv.		
$t^2.v^2$. 2 Skins		Landour, nr. Mussoorie	L. C. Stewart, A.S.B.
$w^2.x^2$. 2 Alc.	♂ ♀	Darjeeling	W. G. Masson.
	2 skull.		

Var. E.—andamanensis.

$a-b$. 2 Skin, skull	Andamans	Capt. Hodge (1860), A.S.B
[Types of <i>Mus andamanensis</i> , Blyth.]		
c . Alc., head only	Andamans	B. Smith (1863).
$d-e$. 2 Alc., ♀	Andamans	G. E. Dobson.
	2 skulls.	
$f-h$. 3 Alc., ♂ ♂ ♀	Barren Island, Bay of Bengal.	F. R. Mallet.
	1 skull.	
$j-k$. 2 Alc., ♂ ♀	South Brother, Andamans.	T. Cadell.
	1 skull.	

Mus rubricosa.

Mus rubricosa, *Anderson Anat. Zool. Res.*, p. 306 (1878).

Distribution.—Kakhyen hills of Upper Burma.

This species is closely allied to *M. rattus nitidus*; it seems to be distinguished only by its very dark ventral surface; whether this is a constant character or not, can only be proved by further specimens.

a . Alc. skull	♂	Hotha, Yunnan	J. Anderson.
[Type of <i>M. rubricosa</i> , Anderson.]			

Mus concolor.

Mus concolor, *Blyth J. A. S. B.*, xxviii, p. 295 (1859); *id. J. A. S. B.*, xxxii, pp. 73, 344; *id. Cat. n. 370*, p. 116; *id. J. A. S. B.*, xlv, *Burma List*, p. 40; *Anderson Four. Linn. Soc.*, xxi, p. 341.

Distribution.—Burma, Upper and Lower, extending southwards to Mergui and the Malay peninsula.

A very closely allied species *Mus ephippium* of Jentink (*Notes Leyd. Mus.*, ii, p. 15) has been recorded from Sumatra and Kina Balu in Borneo.

a . Skin		Malacca.	R. W. G. Firth (1846), A.S.B.
b . Skin	♂	Mergui, 17-12-81	J. Anderson.
c . Skin	♀	" "	J. Anderson.
d . Skin		" "	J. Anderson.
e . Alc.	♂	Shwegyin dist., Tenasserim.	Major Berdmore (1859), A.S.B.
f . Alc., skull	♀	Shwegyin dist., Tenasserim.	Major Berdmore (1859), A.S.B.

Distribution.—Southern India, Cuddapah district and Shevaroy hills.

a-b. 2 Skins, Shevaroy hills, Mdr. W. Daly.
2 skulls.

Mus berdmorei.

Mus berdmorei, Blyth *J. A. S. B.*, xx, p. 173 (1851); id. *J. A. S. B.* xxxii, p. 343; Thomas *P. Z. S.*, 1886, p. 62.

Distribution.—Munipur and Mergui.

This species was first described by Blyth from a single specimen from Mergui; but he afterwards merged the species with his *Mus robustulus* which is doubtless the same as *Mus rattus rufescens*; Thomas (*supra*) has resurrected Blyth's old name for a peculiar rat forming part of the Hume Munipur Collection, which rat, according to Thomas, agrees remarkably with the original description of Blyth.

The skull, which is still in the collection, agrees with Thomas' description of the skull of the Munipur specimen, the flat skin has unfortunately disappeared.

This rat is allied to *Mus blanfordi* and to *Mus confucianus* of Milne Edwards, from China, all of which are distinguished by their parti-coloured tails with the terminal half white.

a. Skull Mergui Major Berdmore.

[Type of *Mus berdmorei* of Blyth.]

Mus urbanus.

Mus musculus, *apud Elliot Madr. Journ.*, x, p. 214 (1839); Cantor *J. A. S. B.*, xv, p. 254

Mus nipalensis, Hodgson *J. A. S. B.*, x, p. 915 (1841) [*sine descr.*]; Gray *Cat. Hodgs. Coll.*, 1st ed., p. 19.

Mus dubius, Hodgson *J. A. S. B.*, x, p. 915 (1841) [*sine descr.*]; Gray *Cat. Hodgs. Coll.*, 1st ed., p. 19; Hodgson *Ann. Mag. N. H.*, xv, p. 268; Horsfield *Cat. E. I., Mus.*, p. 143.

Mus manei, Gray *List Mamm., B. M.*, p. 111 (1843) [*sine descr.*]; Blyth *J. A. S. B.*, xx, p. 172; Kelaart *Prodr. Faun. Zeylan.*, p. 64.

Mus urbanus, Hodgson, *Ann. Mag. N. H.*, xv, p. 269 (1845); Blyth *J. A. S. B.*, xxxii, p. 345; id. *Cat. no.* 380, p. 118; Gray *Cat. Hodgs. Coll.* 2nd ed., p. 10; Jerdon *Mamm.*, p. 203; Stoliczka *J. A. S. B.*, xli, p. 228; Thomas *P. Z. S.*, 1881, p. 544; Murray *Zool. Sind.*, p. 46.

Mus homourus, Hodgson *Ann. Mag. N. H.*, xv, p. 268 (1845); Blyth *J. A. S. B.*, xxviii, p. 295; id. *J. A. S. B.*, xxxii, p. 346; id. *Cat. no.* 379, p. 118; Jerdon *Mamm.*, p. 204.

Mus darjeelingensis, Hodgson *Ann. Mag. N. H.* (2) iii, p. 203 (1849) [*sine descr.*]; Horsfield *Cat. E. I. Mus.*, p. 143; Blyth *J. A. S. B.*, xxxii, p. 348; id. *J. A. S. B.*, xxxiv, p. 193; Jerdon *Mamm.*, p. 205.

Mus tytleri, Blyth *J. A. S. B.*, xxviii, p. 296 (1859); id. *J. A. S. B.*, xxxii, p. 346; Jerdon *Mamm.*, p. 205.

Mus rama, Cantor *apud Blyth J. A. S. B.*, xxxiv, p. 194 (1865).

Mus kakhyensis, *Anderson Anat. Zool. Res.*, p. 307 (1878).

Mus viculorum, *Anderson Anat. Zool. Res.*, p. 308 (1878).

Distribution.—The whole of India and Ceylon, except in Sind and the Punjab, where it is replaced by the next species, *Mus bactrianus*; it extends into the Himalayas and over Assam, Cachar, Burma, the Andamans and Nicobars; Thomas also gives Malacca.

This species is very doubtfully distinct from the almost universally distributed *Mus musculus*; it has however been treated by Thomas (*l.c.*) as a distinct species, and it has accordingly been left so for the present; Blyth states that *Mus musculus* has larger ears, smaller eyes, and broader paws, and the tail one-fourth shorter; none of these differences seem to hold good for a large number of specimens.

a-b. 2 Alc.	♀ ♂	Calcutta	J. Anderson.
c-d. 2 Alc., 2 skulls		Darjeeling	G. King.
	♀ ♂		
e. Alc., skull	♀	"	J. Anderson.
f-g. 2 Alc.	♂ ♀	"	W. Masson.
h-k. 3 Alc., 1 skull		Ling Ling, Brit. Sikkim	T. Johnston (in jungle).
	♂ 2 juv.		
l. Alc.	♂	" " "	T. Johnston (in jungle).
m. Alc., skull	♂	Karachi	Karachi Mus. [Ex.]
n-q. 4 Alc., 1 skull		Fattehgarh, N.-W. P.	A. Anderson.
	♂, ♂, ♀, juv.		
r. Alc.	juv.	Banda Dist., N.-W. P.	J. Cockburn.
s-u. 3 Alc., 1 skull		Benares, N.-W. P.,	Mus. Coll.
	♂ ♀ ♀	10-1-71.	
v w. 2 Alc.	♂	Khandala, Bm.	G. W. Vidal.
x-y. 2 Alc., 1 skull		Collagelly hills, Trichi.	R. H. Beddome.
	♂ ♀	dist., Md.	
z. Alc.	♂	Madras	G. Bidie.
a ² -b ² . 2 Alc.	♀	"	G. Bidie.
c ² . Alc.	juv.	"	G. Bidie.
d ² . Alc., skull	♂	"	W. Davison.
	juv.		
e ² -f ² . 2 Alc., 1 skull		Vizagapatam, Md.	Mus. Coll.
	♂		
g ² -j ² . 3 Alc., 1 skull		Ceylon	E. F. Kelaart.
	♀ ♀ ♂		
k ² -m ² . 3 Alc., 2 skulls		Raniganj, Bg.	Purchased.
	♂ ♀ ♀		
n ² -p ² . 3 Alc., 2 skulls		Purneah, Bg.	J. Anderson.
	♂ ♂ ♀		
q ² -s ² . 3 Alc.	♀ ♂	Calcutta	E. Blyth.
	juv.		
t ² -v ² . 3 Alc.	♂	"	J. Anderson.
	2 juv.		
w ² . Alc.	♀	"	R. deCruz.
x ² -z ² . 3 Alc.	♂	"	Mus. Coll.
a ³ -b ³ . 2 Alc.	♀ ♂	Dhappa, Calcutta	Mus. Coll. (1881).
c ³ -e ³ . 3 Alc., 2 skulls		Botanical Gardens, Calcutta.	J. Anderson.
	♂ ♀ juv.		
f ³ . Alc.	♂	Kututangra (on cocoanut trees), Calcutta.	Mus. Coll.

g^3-h^3 . 2 Alc. ♂	Dacca	N. Belletty.
j^3 . Alc. ♂	Haldibari, Bg.	Purchased.
k^3-l^3 . 2 Alc., 2 skulls ♂ ♀	Goalpara, Assam	H. L. Haughton (1868).
m^3 . Alc., skull ♀	Sibsagar, Assam	S. E. Peal.
n^3 . Alc. juv.	Garo Hills	Capt. Williamson.
o^3 . Alc., skull ♂	Khasia Hills	H. H. Godwin Austen (1870).
	juv.	
p^3-q^3 . 2 Alc. ♀ ♂	Silcuri, Cachar	J. Wood Mason.
r^3 . Alc. ♀	Cachar	Mus. Collector (1867).
s^3-t^3 . 4 Alc. ♂ 3 ♀	"	M. J. Ogle.
w^2-x^3 . 2 Alc. ♀	Chittagong Hill Tracts	J. T. Jarbo.
y^3 . Alc. ♂	Andamans	Capt. Hodge, A.S.B.
z^3 . Alc., skull ♂	"	J. Homfray.
a^4-b^4 . 2 Alc., skull ♂	"	G. E. Dobson.
	♂ ♀	
c^4-f^4 . 4 Alc., 1 skull ♂ ♀ 2 juv.	"	J. Wood Mason.
g^4-h^4 . 2 Alc. ♀ juv.	Nicobars	F. A. de Rœpstroff.
j^4 . Alc., skull ♂	Ponsee, Kakhyen hills, Burma.	J. Anderson.

[Type of *Mus* of *kakhyensis*, Anderson.]

k^4-l^4 . 2 Alc., 2 skulls ♀	Ponsee Kakhyen hills, Burma.	J. Anderson.
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[Types of *Mus viculorum*, Anderson.]

m^4-o^4 . 3 Stuffed	Calcutta	E. Byth, A.S.B.
p^4 . Skin	Sirguja, 6-71	V. Ball.
q^4 . Alc., skull ♂	Burma	J. Wood Mason.
r^4 . Alc., skull ♀	"	Major Berdmore, A.S.B.
s^4-t^4 . 2 Alc.	Nicobars, 7-81	H. H. Godwin Austen.

Mus sublimis.

Mus crassipes, *apud* *Blanford* *J. A. S. B.*, xlv, p. 108 (1875).

Mus sublimis, *Blanford Yarkand Mammals*, p. 51 (1879); *Scully Ann. Mag. N. H.* (5), viii, p. 99.

Distribution.—This mouse has only been found in the higher regions of Central Asia, once by Stoliczka, west of the Pan-kong Lake in Ladak, at 13,000 feet, and once by Colonel Biddulph in the Astor district of Kashmir, at a height of 11,000 feet.

The species is nearly allied to *Mus urbanus*, but differs in having a slightly longer hind-foot with the tubercles very far apart; the skull differs from that of *M. urbanus* and *M. bactrianus* in having the zygomatic arches incurved, the palate also is peculiar, the posterior nasal opening being particularly wide, and the pterygoid short and very considerably thickened.

a . Alc., skull ♀	Tanksee W. of Pankong Lake, Ladak, 13,000 ft.	F. Stoliczka.
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[Type of *Mus sublimis*, Blanford.]

Mus bactrianus.

Mus bactrianus, *Blyth* *J. A. S. B.*, xv, p. 140 (1846); id. *J. A. S. B.*, xxxii, p. 347; id. *J. A. S. B.*, xxxiv, p. 193; *Ferdon Mamm.*, p. 205; *Blanford Persia*, p. 56, pl. v, fig. 2; id. *J. A. S. B.*, xlvi, p. 324; *Danford and Alston P. Z. S.*, 1880, p. 61; *Scully Ann. Mag. N. H.* (5), viii, p. 228; *Thomas P. Z. S.*, 1881, p. 546; *Murray Zool. Sind.*, p. 47; *Scully J. A. S. B.*, lvi, p. 72; *Radde Zool. J. B.*, iv, p. 1033.

Mus gerbillinus, *Blyth* *J. A. S. B.*, xxii, p. 410 (1853); id. *Cat.* no. 382, p. 119.

Mus theobaldi, *Blyth* *J. A. S. B.*, xxii, p. 583 (1853).

Distribution.—The Punjab and Sind, extending northwards to the Himalayas, at Simla and to Ladak, and westward through Afghanistan and Baluchistan to the Euphrates, Palestine and Egypt.

This species seems to replace the last in desert and dry countries, it resembles it in every particular except in its very pale colour and distinctly white ventral surface.

a. Skin	♂	Shiraz, 6-69.	Sir O. St. John.
b. Skin		Mashish, nr. Karman, S E. Persia, 20-5-72.	W. T. Blanford.
c. Skin	♂	Maimanah, 4-4-86.	C. E. Yate.
d. Skin		Pind Dadan Khan	W. Theobald, A.S.B.
[Type of <i>Mus gerbillinus</i> , Blyth.]			
e-g. 3 Alc.	♂ ♀ ♀	Pishin, Baluchistan	W. T. Blanford.
h-m. 5 Alc.	♂ 4 ♀	Kalagan, Baluchistan	W. T. Blanford.
n-p. 3 Alc.	♀	Bampur, Beluchistan	W. T. Blanford.
q-t. 4 Alc.	2 ♂ 2 ♀	nr. Karman, S. Persia	W. T. Blanford.
u v. 2 Alc.	♂ ♀	Kohat, Punjab	M. J. Ogle.
w-x. 2 Alc.	♀	Rajanpur, Punjab	E. Saunders.
y-c ² . 5 Alc.	♂	Shahpur, Punjab	G. Henderson.
d ² f ² . 3 Alc., 1 skull	♂ ♀ juv.	Pind Dadan Khan, Punjab	W. Theobald, A.S.B.
g ² -k ² . 4 Alc.	2 ♂ 2 ♀	Karachi	Karachi Mus.
l ² -m ² . 2 Alc.	♂	"	Karachi Mus. [Ex.]
n ² . Alc.	♀	Clifton, Karachi	Karachi Mus. [Ex.]
o ² . Alc.	♂	Acacia Forest, Kotri, Sind.	Karachi Mus. [Ex.]
p ² -q ² . 2 Alc.	♂ ♀	Sind	Karachi Mus.
r ² . Alc.	♂	Kotri, Sind	J. Scully.
s ² . Alc.	♀	Pir Pinjal	W. Theobald, A.S.B.
t ² -w ² . 4 Alc.	3 ♂ 1 ♀	Ladak	G. Henderson.
x ² -a ³ . 4 Alc.	2 ♂ 2 ♀	Simla	R. A. Sterndale.
b ³ . Skull	♂	Bampur, Baluch.	W. T. Blanford.
c ³ . Skin		Suleiman Mts., 10-74	V. Ball.
d ³ . Alc.	♀	Jerusalem	J. Anderson.
e ³ . Alc., skull	♀	nr. Attock	A. Barclay.
f ³ . Alc.	♀	Bebenanee, Baluch.	J. A. Murray.
g ³ . Alc., skull	♂	Karnak, Egypt	J. Anderson.

Mus cervicolor.

Mus cervicolor, *Hodgson Ann. Mag. N. H.*, xv, p. 268 (1845); *Gray Cat. Hodgs. Coll.*, 1st ed., p. 19; *Ferdon Mamm.*, p. 206. [pt.]; *Thomas P. Z. S.*, 1881, p. 547; id. *P. Z. S.*, 1886, p. 65.

Mus strophiatatus, *Hodgson Ann. Mag. N. H.*, xv, p. 268 (1845); *Blyth J. A. S. B.*, xxxii, p. 349; id. *J. A. S. B.*, xxxiv, p. 193.

Mus cunicularis, *Blyth J. A. S. B.*, xxiv, p. 721 (1855); id. *J. A. S. B.*, xxxii, p. 348; id. *Cat.* no. 384, p. 119.

Distribution.—Nepal and the Eastern Himalayas, extending through Assam and Munipur.

There does not seem to be any true distinction between this species and *Leggada buduga*; Thomas (*l. c.*) allows that they are nearly allied but asserts that they can be distinguished by the length of their ears; this distinction does not seem to hold good when measurements of many individuals are taken. As this catalogue has been founded on Thomas' monograph on the Indian Mice, the two species have been kept apart, being merely distinguished by their geographical origin.

a-c. 3 Alc., 1 skull Khasia Hills
2 ♂ 1 ♀

F. Skipwith (1855), A.S.B.

[Types of *Mus cunicularis*, Blyth.]

d-e. 2 Alc., 1 skull Garo Hills

N. Belletty (1870).

♀
f. Alc., skull

Dacca

N. Belletty (1870).

♂
g-h. 2 Alc., 2

Cachar

Mus Coll.

skulls ♂ ♀

j. Alc., skull ♂

Narainpur, Assam

H. H. Godwin Austen.

juv.

k. Alc., skull ♂

Hailakandi, Cachar

C. H. Dreyer.

juv.

Mus arianus.

Mus sylvaticus, *apud Filippi Viaggio Persia*, p. 344 (1865).

Mus erythronotus, *Blanford Ann. Mag. N. H.* (4) xvi, p. 311 (1875); id. *Persia*, p. 54, pl. v, fig. 3; id. *Yarkand Mammals*, p. 54; id. *J. A. S. B.*, xlviii, p. 97 [*nec. Temminck*].

Mus arianus, *Blanford Ann. Mag. N. H.* (5), vii, p. 162 (1881); *Scully P. Z. S.*, 1881, p. 205; *Thomas P. Z. S.*, 1881, p. 548; *Buchner Wiss. Result. Przewalski Reisen, Rodentia*, p. 90.

Distribution.—Northern Persia, Gilgit, and the Pamir, extending to the Thian Shan (Przewalsky).

This species is closely allied to *Mus sylvaticus* which it seems to replace in Asia; the distinctions between the two species are clearly pointed out by Thomas (*l. c.*) and the persistence of these differences seem to be confirmed by the examination of the specimens in the Indian Museum.

a. Skin	Kashgar, 14-2-74 (Biddulph).	F. Stoliczka.
b-e. 4 Skins, 2 skulls.	Panjah, Wakhan, 4-74	F. Stoliczka.
f-g. 2 Skins, 1 skull.	Gilgit	J. Biddulph.
h. Skin, skull juv.	Hunza	J. Biddulph.
j-k. 2 Skins, 2 skulls.	Chitral, 10-85, 5,000 ft.	G. M. Giles.
l. Skin, skull	Gilgit, 1-86, 6,000 ft.	G. M. Giles.
m. Skin ♂	" 8-79	J. Scully.
n. Skin	" 2-79	J. Scully.
o-p. 2 Alc., 1 skull.	♂ Kohrud N. of Ispahan	W. T. Blanford.
[Types of <i>Mus erythronotus</i> , Blanford.]		
q. Alc.	♀ Gilgit	J. Scully.

Mus nitulidus.

Mus nitulidus, Blyth *J. A. S. B.*, xxviii, p. 294 (1859); id. *J. A. S. B.*, xxxii, p. 347; id. *Cat.* no. 381, p. 119; id. *J. A. S. B.*, xlv, *Burma List*, p. 40; Thomas *P. Z. S.*, 1881, p. 550.

Distribution.—District of Shwegyin in Burma and Sikkim, and probably the intervening country.

The type of this species is missing; it perhaps disappeared during the transference of the Asiatic Society's collections to the present Museum; it is therefore impossible ever to be certain as to whether Thomas' identification of this species is correct or not. The following specimens agree fairly well with Thomas' description:—

a. Alc., skull ♂	Darjeeling	G. King.
b-e. 4 Alc., 1 skull	Rungbee, Darjeeling	G. King.
f-h. 3 Alc., 1 skull	" "	G. King.
j-n. 5 Alc. juv.	" "	G. King.

Mus mettada.

Golunda mettada, Gray *Charlesw., Mag. N. H.*, i., p. 586 (1837); Horsfield *Cat. E. I. Mus.*, p. 144; Blyth *J. A. S. B.*, xxxii, p. 352; Jerdon *Mamm.*, p. 213.

Mus lanuginosus, Elliot *Madras Journ.*, x, p. 212 (1839).

Mus mettada, Blanford *J. A. S. B.*, xlv, p. 290, pl. i, figs. 1-9 (1877); Thomas *P. Z. S.*, 1881, p. 550; Murray *Zool. Sind*, p. 47.

Distribution.—This species seems to be confined to the western and southern parts of India, extending eastward as far as the North-West Provinces only.

a-c. 3 Alc., 2 skulls	Etawah dist., N.-W. P.	A. Anderson.
♂ 2 ♀		

d. Alc. , head and foot only.	Banda dist., N.-W. P.	J. Cockburn.
e. Alc. ♀ juv.	Karachi	Karachi Mus.
f-l. 6 Alc. ♂	Sind	J. A. Murray.
5 juv.		
m-o. 3 Alc. ♂ 2 ♀	Madras Pr.	G. Bidie.
p-r. 3 Alc. ♂ ♀	.....	No history.
juv.		

Mus gleadowi.

Mus gleadowi, *Murray P. Z. S.*, p. 809, pl. li (1885).

Distribution.—Western India; the type was described from Karachi, and the Indian Museum has specimens from Goona and Kutch.

This species seems to be very closely allied to *M. mettada*, from which it is however distinguished by its considerably smaller size and by its very much shorter and narrower tarsus; this species too seems never to possess more than 4 pads on the hind-foot, while all the specimens of *M. mettada* in the Museum possess the proximal 5th pad.

The measurements of the three specimens compare very well with the measurements given by Blanford in a note appended to the original description, *i.e.*:—Head and body, 3·40; tail, 2·80; hind-foot, ·70; forearm and hand, ·80; ear conch, ·61; auditory meatus to muzzle, ·91.

a-b. 2 Alc. ♂	Goona, C. I.	A. Barclay.
c. Alc., skull. ♂	Kutch	F. Stoliczka.

Mus wagneri.

Mus wagneri, *Eversmann Bull. Nat. Mosc.*, xxi, pt. 1, p. 191, pl. i, fig. 1 (1848); *Buchner Wiss. Result. Przewalski Reise, Rodentia*, p. 88.

Mus sylvaticus, *apud Brandt Lehmann's Reise nach Buchara*, p. 305 (1852)*.

Mus pachycercus, *Blanford J. A. S. B.*, xliv, p. 108 (1875); *id.*, *Yarkand Mamm.*, p. 53, pl. ix, fig. 2, pl. xb, fig. 4.

Distribution.—The house-mouse of Central Asia, described as a new species by Blanford, has been since identified by Buchner (*l.c.*) as a species of Eversmann's, described long ago from a specimen collected on the steppes between the Volga and the Ural. It has been got by Przewalsky from a large number of localities throughout Turkestan and Mongolia, and seems to be the common house-mouse of all Central Asia.

a-d. 4 Skins	Yarkand, 11-73	F. Stoliczka.
e. Skin	Sanju, 10-73	F. Stoliczka.
f-g. 2 Skins	Kargalik, 11-73	F. Stoliczka.
h. Skin, skull.	" 5-74	F. Stoliczka.
j. Skin	Yangihissar, 4-74	F. Stoliczka.

k. Skin	.....	F. Stoliczka.
l-m. 2 Alc., 1 skull	Yarkand, 11-73	F. Stoliczka.
	♂	
[Types of <i>Mus pachycercus</i> , Blanford.]		
n. Alc.	♀ Eastern Turkestan	J. Scully.
o. Skin, skull	Resht, Caspian	W. T. Blanford.

Mus musculus.

Mus musculus, *Linnaeus Syst. Nat.*, 12th ed., i, p. 83 (1766); *Blasius Säugeth. Deutschl.*, p. 320; *Blyth Cat.* no. 378, p. 118.

Distribution.—Cosmopolitan, if as Thomas (*Encycl. Brit.*, xvii, p. 5) believes to be the case, *Mus urbanus* is indistinguishable from this species; the original home of *Mus musculus* was probably in India.

a. Stuffed	England	Mr. Kirtland (1845), A. S. B.
b. Stuffed	N. Carolina, U. S. A.	Rev. F. Fitzgerald (1852), A. S. B.
c-d. 2 Alc., 1 skull	London	A. D. Bartlett.
	♂	
e-f. 2 Alc., 1 skull	„	A. D. Bartlett.
	♀	

Mus sylvaticus.

Mus sylvaticus, *Linnaeus Syst. Nat.*, 12th ed., i, p. 84 (1766); *Blasius Säugeth. Deutschl.*, p. 322; *Blyth Cat.* no. 373, p. 116.

Distribution.—The whole of Europe, eastwards it is replaced by *Mus arianus*.

a-d. 4 Alc., 1 skull	London	A. D. Bartlett.
	♂	
e-f. 2 Alc., 1 skull	„	A. D. Bartlett.
	♀	
g. Stuffed	Switzerland	A. Malherbe (1842), A. S. B.
h-j. 2 Stuffed	England	A. D. Bartlett, A. S. B.

Mus minutus.

Mus minutus, *Pallas Nov. Spec. Quad. e Glir.*, p. 345 (1778); *Blasius Säugeth. Deutschl.* p. 326; *Blyth Cat.* no. 375, p. 117.

Mus messorius, *Shaw Genl., Zool.*, ii, pt. 1, p. 62 (1801).

Mus soricinus, *pendulinus et parvulus Hermann Obs. Zool.*, i, pp. 57, 61, 62 (1804).

Mus pratensis, *Ocksay Nova Acta Acad. Zool. Caro.*, xv, pt. 2, p. 243, pl. lxviii (1831).

Distribution.—The Palaearctic region.

a. Alc.	♂ England	H. E. Strickland (1844), A.S.B.
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Mus abyssinicus.

Mus abyssinicus, *Rüppell Mus. Senck.* iii, p. 104, pl. vii fig. i (1845); *Blanford Abyssinia*, p. 283.

Distribution.—Abyssinia.

- a. Stuffed Wandash Pass, Abyssinia, W. T. Blanford.
4-68.
b-c. 2 Skins Wandash Pass, Abyssinia W. T. Blanford.
4-68.

Mus pumelio.

Mus pumelio, *Sparrman Kongl. Vetens. Akad. Handl.*, v, p. 236, pl. vi, (1784); *A. Smith S. African Zool*, pl. xlvi, fig. 1; *Blyth Cat.* no. 388, p. 120.

Distribution.—South Africa.

- a-b. 2 Stuffed South Africa E. L. Layard.

Mus longipilis.

Mus longipilis, *Gould Mamm. Australia*, iii, pl. xiii (1863).

Distribution.—New South Wales, Australia

- a. Skin Australia. Melbourne Mus. [Ex.]

Mus assimilis.

Mus assimilis, *Gould P. Z. S.*, p. 241 (1857); id. *Mamm. Austr.*, iii, pl. xv.

Distribution.—New South Wales to Western Australia.

- a-b. 2 Skins Western Australia No history.

Mus gouldi.

Mus gouldi, *Waterhouse Zool. Voy. Beagle Mamm.* (1840)*; *Gray List Mamm. B. M.*, p. 111; *Gould Mamm. Austr.*, iii, pl. xix; *Blyth Cat.* no. 399, p. 116.

Mus. grayii, *Gray App. Grey's Travels Austr*, ii, p. 410 (1841).

Distribution.—Australia.

- a. Stuffed Australia Sydney Institution
(1846), A.S.B.
b. Skin Plains of West Australia Brit. Mus. [Ex.]

Genus LEGGADA.

Leggada, *Gray Charlesw. Mag. N. H.*, i, p. 586 (1837).

Nannomys, *Peters Monatsber. Akad. Berlin*, p. 480 (1876).

Two species only are found in the Indian Empire; three others have been described from Africa.

- *Key of the Indian Species.*

a. Larger, 3 to 4 inches; tail as long as the body only; extra cusp on the anterior molar well developed.

L. platythrix, p. 80.

a². Smaller, 2 to 3 inches; tail about equal to the head and body; extra cusp on the anterior molar variable.

L. buduga, p. 80.

Leggada platythrix.

Mus platythrix, Bennett *P. Z. S.*, p. 121 (1832); *Elliot Madras Journ.*, x, p. 215.

Leggada platythrix, Gray *Charlesw. Mag. N. H.*, i, p. 586 (1837); *Blyth J. A. S. B.*, xxxii, p. 350; id. *Cat.* no. 395, p. 121; *Ferdon Mamm.*, p. 207.

Mus spinulosus, *Blyth J. A. S. B.*, xxiii, p. 734 (1854).

Leggada spinulosa, *Blyth J. A. S. B.*, xxxii, p. 349 (1863); id. *Cat.* no. 394, p. 121; *Ferdon Mamm.*, p. 208.

Mus (*Leggada*) *platythrix*, Thomas *P. Z. S.*, p. 553 (1881).

Distribution.—This rat seems to have much the same distribution as *Mus mettada*, being confined to Western, Central and Southern India.

a-b. 2 Skins	South India	Sir W. Elliot, A.S.B.
c-d. 2 Skins	S. Malabar	Rev. J. Baker, A.S.B.
e. Alc. and ♂ skull ?	Punjab	W. Theobald (1854), A.S.B.

[Type of *Mus spinulosus*, Blyth.]

f. Alc., skull ♀	Khandala, Bm.	H. M. Phipson.
g. Alc., skull ♀	Bhandara, C.P., 26-9-70.	W. T. Blanford.
h. Alc. ♂	Collagelly Hills, Mdr.	R. H. Beddome.
j. Alc. ♀	Clifton, Karachi.	Karachi Mus. [Ex.]
k. Alc. ♂	Khandala, Bm.	H. M. Phipson.

Leggada buduga.

Leggada booduga, Gray *Charlesw. Mag. N. H.*, i, p. 586 (1837).

Mus lepidus, *Elliot Madr. Journ.*, x, p. 216 (1839).

Mus terricolor, *Blyth J. A. S. B.*, xx, p. 172 (1851); id. *J. A. S. B.*, xxxii, p. 349; id. *Cat.* no. 386, p. 119; *Ferdon Mamm.*, p. 206.

Mus albidiventris, *Blyth J. A. S. B.*, xxi, p. 351 (1852).

Mus fulvidiventris, *Blyth J. A. S. B.*, xxi, p. 351 (1852); id. *J. A. S. B.*, xxxii, p. 349; id. *Cat.* no. 383, p. 119.

Mus cervicolor, *apud Kelaart Prodr. Faun. Zeylan.*, p. 64 (1852); *Blyth J. A. S. B.*, xxxii, p. 349; id. *Cat.* no. 384, p. 119; *Ferdon Mamm.*, p. 206. [pt.]

Leggada lepida, *Blyth J. A. S. B.*, xxxii, p. 350; id. *Cat.* no. 396, p. 121; *Ferdon Mamm.*, p. 209.

Mus beavani, Peters *P. Z. S.*, p. 559 (1866); *Blyth J. A. S. B.*, xlv *Burma List*, p. 40.

Mus (*Leggada*) *buduga*, Thomas *P. Z. S.*, p. 553 (1881).

Distribution.—All over India except in the Punjab, Himalayas, and Assam, in which latter it is replaced by the closely allied *Mus cervicolor*.

<i>a-b</i> . 2 Skins	nr. Calcutta	E. Blyth, A.S.B.
<i>c-f</i> . 4 Skins	Midnapore jungles	E. Blyth, A.S.B.
<i>g</i> . Skin, skull	N. of Chanda, C. P., 1-2-67.	W. T. Blanford.
<i>h</i> . Skin and skull.	Sirguja, Chota Nagpur	V. Ball, 1871.
<i>j</i> . Skin	South India [Typical of <i>Mus lepidus</i> , Elliot.]	Sir. W. Elliot, 1843, A.S.B.
<i>k</i> . Skin	South Malabar	Rev. J. Baker, A.S.B.
<i>l</i> . Skin	Trincomali	E. F. Kelaart, A.S.B.
[Type of <i>Mus fuvidiventr</i> is, Blyth.]		
<i>m</i> . Alc., skull ♂	Fattehgarh, N.-W.P.	A. Anderson.
<i>n-p</i> . 3 Alc. ♂	Etawah, N.-W.P.	A. Anderson.
<i>q-r</i> . 2 Alc. ♂	Banda dist., N.-W.P.	J. Cockburn.
<i>s</i> . Alc., skull ♂	Allahabad, N.-W.P.	J. Cockburn.
<i>t-u</i> . 2 Alc. ♂ ♀	Bhandara, C. P.	W. T. Blanford.
<i>v w</i> . 2 Alc. ♂ juv.	Karachi	Karachi Mus. [Ex.]
<i>x</i> . Alc., skull ♀	Poona, Bm.	F. Stoliczka.
<i>y</i> . Alc., skull ♀	Shevaroy Hills, Mdr.	F. Stoliczka.
<i>z</i> . Alc. ♀	Madras	G. Bidie.
<i>a</i> ² . Alc., skull ♂	"	J. Anderson.
<i>b</i> ² - <i>c</i> ² . 2 Alc., ♂	"	Madras Mus. [Ex.]
1 skull.		
<i>d</i> ² - <i>e</i> ² . 2 Alc. ♀	"	Madras Mus. [Ex.]
1 skull.		
<i>f</i> ² . Alc. juv.	"	Madras Mus. [Ex.]
<i>g</i> ² - <i>h</i> ² . 2 Alc., ♂	Trichinopoly dist.	R. H. Beddome.
2 skulls.		
<i>j</i> ² - <i>k</i> ² . 2 Alc. ♂	Hills, 4,000 ft., Ganjam dist.	R. H. Beddome.
<i>l</i> ² - <i>m</i> ² . 2 Alc. ♂ ♀	Lower forests, Ganjam dist.	R. H. Beddome.
<i>n</i> ² - <i>o</i> ² . 2 Alc. ♂	Calcutta	E. Blyth, A.S.B.
[with "a"- <i>f</i> ," see above, types of <i>Mus terricolor</i> , Blyth.]		
<i>p</i> ² - <i>q</i> ² . 2 Alc. ♀	Calcutta	E. Blyth.
<i>r</i> ² <i>s</i> ² . 2 Alc. ♀ juv.	Garden Reach, Calcutta	Mus. Coll.
<i>t</i> ² - <i>w</i> ² . 4 Alc., 2 skulls	Bodanga, nr. Calcutta	Mus. Coll.
♂ 3 ♀		
<i>x</i> ² - <i>y</i> ² . 2 Alc. ♂ ♀	Bally, nr. Calcutta	Mus. Coll.
<i>z</i> ² - <i>b</i> ³ . 3 Alc. ♂ 2 juv.	"	Mus. Coll.
<i>a</i> ♀ <i>c</i> ³ . Skin, skull.	Manbhoom "	Mus. Coll., 1866.
<i>d</i> ³ . Alc. ♂	nr. Calcutta	E. Blyth.
♀ <i>e</i> ³ . Alc. ♀	Dhappa, Calcutta	Mus. Coll.

Genus CHIROPDOMYS.

Chiropodomys, *Peters Monatsber. Akad. Berlin*, p. 448 (1868). *Type*, *C. penicillatus*.

Chiropodomys gliroides.

Mus gliroides, *Blyth* *J. A. S. B.*, xxiv, p. 721 (1855); *id.* *J. A. S. B.*, xxxii, p. 345; *id.* *Cat.* no. 390, p. 120.

Mus peguensis, *Blyth* *J. A. S. B.*, xxviii, p. 295 (1859); *id.* *J. A. S. B.*, xxxii, p. 345; *id.* *Cat.* no. 372, p. 116; *id.* *J. A. S. B.*, xxxiv, p. 193; *id.* *J. A. S. B.*, xlv, *Burma List*, p. 40.

Chiropodomys penicillatus, *Peters Monatsber. Akad. Berlin*, p. 448, pl. i (1868); *Lütken P. Z. S.*, 1886, p. 418; *Doria Ann. Mus. Genoa*, (2), iv, p. 631.

Chiropodomys gliroides, *Thomas P. Z. S.*, p. 78 (1886); *id.* *P. Z. S.*, 1889, p. 235.

Distribution.—Assam, Burma, the Malay peninsula, Java, Borneo and the Philippine Islands; it probably also occurs in Sumatra and other islands of the East Indies, but has only been recorded from the places above mentioned.

The unique type of *Mus gliroides* of Blyth has unfortunately disappeared from the Museum, so that it is not possible to be absolutely sure as to whether *Mus peguensis* is identical with it or not, there seems, however, to be no reasonable doubt on the subject; there is in the Museum a mouse from Cherrapoonjee whence the type specimen originally came which entirely agrees with the description of *Mus gliroides*, and this specimen is certainly identical with *Mus peguensis*.

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|------------------|------------------------|--------------------------|
| a. Skin, skull | Sitang Valley, Burma | Major Berdmore, A. S. B. |
| b. Alc., skull ♂ | Cherrapoonjee, 12-7-71 | J. H. Bourne. |
| c. Alc., skull ♀ | Munipur | R. D. Oldham. |
| d. Alc., skull ♀ | Sitang Valley, Burma | Major Berdmore, A. S. B. |

[With "a" the type of *Mus peguensis*, Blyth.]

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|-----------------|-----------------|------------------------|
| e. Alc. skull ♀ | Sitang Valley ? | Major Berdmore, A.S.B. |
|-----------------|-----------------|------------------------|

Genus HAPALOMYS.

Hapalomys, *Blyth* *J. A. S. B.*, xxviii, p. 296 (1859). *Type*, *H. longicaudatus*

Hapalomys longicaudatus.

Hapalomys longicaudatus, *Blyth* *J. A. S. B.*, xxviii, p. 296 (1859); *id.* *J. A. S. B.*, xxxii, p. 353; *id.* *Cat.* no. 358, p. 112; *id.* *J. A. S. B.*, xlv, *Burma List*, p. 38.

Distribution.—Is known only from the three specimens mentioned below procured in Tenasserim.

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|-----------------|----------------------|--------------------------|
| a. Skin ♂ | Sitang Valley, Burma | Major Berdmore, A. S. B. |
| b. Alc. skull ♀ | " " | Major Berdmore, A. S. B. |

[Types of *Hapalomys longicaudatus*, Blyth.]

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|-----------|--------------------|-------------------|
| c. Alc. ♀ | Mita, Tavoy, Burma | Museum Collector. |
|-----------|--------------------|-------------------|

Genus VANDELEURIA.

Vandeleuria, *Gray Ann. Mag. N. H.*, x, p. 265 (1842) *Type*, *V. oleracea*.

Vandeleuria oleracea.

- Mus oleraceus*, *Bennett P. Z. S.*, p. 121 (1832); *Elliot Madras Journ.*, x, p. 214; *Blyth F. A. S. B.*, xxviii, p. 295; id. *F. A. S. B.*, xxxii, p. 344; id. *Cat.* no. 389, p. 120; *Ferdon Mamm.*, p. 202.
Mus dumecolus, *Hodgson F. A. S. B.*, x, p. 915 (1841).
Vandeleuria oleracea, *Gray Ann. Mag. N. H.*, x, p. 265 (1842).
Mus (*Vandeleuria*) *dumeticola*, *Hodgson Ann. Mag. N. H.*, xv, p. 268 (1845).
Mus povensis, *Hodgson Ann. Mag. N. H.*, xv, p. 269 (1845).
Mus nilagiricus, *Ferdon Mamm.*, p. 203 (1867).
Mus badius, *Blyth F. A. S. B.*, xxviii, p. 295; id. *F. A. S. B.*, xxxii, p. 344; id. *Cat.* no. 391, p. 120; id. *F. A. S. B.*, xlv, *Burma List*, p. 41.
Mus (*Vandeleuria*) *oleraceus*, *Anderson Anat. Zool. Res.*, p. 309 (1878); *Thomas P. Z. S.*, 1881, p. 556; id. *P. Z. S.*, 1886, p. 65.

Distribution.—The whole of India from the Himalayas to the South, extending eastwards through Assam to Burma; recently it was received from Ceylon with a collection of rats and mice sent to the Indian Museum for identification.

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|------|------------------|------------------------------|-------------------------|
| a. | Skin | Naga Hills | J. Butler, 1873. |
| b. | Skin | ♂ Katmandu, Nepal, | J. Scully. |
| | | 22-11-77. | |
| c-d. | 2 Alc. 1 skull | Katmandu, Nepal, | Muz. Coll. |
| | ♂ ♀ | 10-1-70. | |
| e-f. | 2 Alc. | ♂ ♀ Ling Ling, nr. Kurseong, | T. Johnston. |
| | | Bt. Sikkim. | |
| g. | Alc. | ♀ Darjeeling | G. King. |
| h-j. | 2 Alc. 1 skull | Allahabad | J. Cockburn. |
| | ♂ ♀ | | |
| k. | Alc. | ♀ Banda dist., N.-W. P. | J. Cockburn. |
| l. | Alc. skull | ♂ S. E. Berar, 4-8-70 | W. T. Blanford. |
| m. | Alc. | ♂ Khandala, Bm. | G. W. Vidal. |
| n-q. | 4 Alc., 3 skulls | Lodang, Godavery | W. T. Blanford. |
| | ♂ 2 ♀ 1 juv. | dist., 27-7-71. | |
| r-t. | 3 Alc. | ♀ Cherrapoonjee, Assam, | J. H. Bourne. |
| | | 12-7-71. | |
| u. | Alc. skull | ♀ Nampoung, Yunnan | J. Anderson, 1875. |
| | | Frontier. | |
| v. | Alc. skull | ♀ Burma, 10-72 | W. Theobald. |
| w-x. | 2 Stuffed | South India | Sir W. Elliot, A. S. B. |
| y. | 1 Stuffed | Assam | F. Jenkins, A. S. B. |

Genus GOLUNDA.

Golunda, *Gray Charlesw. Mag. N. H.*, i, p. 586 (1837). *Type*, *G. ellioti*.

Golunda ellioti.

Golunda ellioti, *Gray Charlesw. Mag. N. H.*, i, p. 586 (1837); id. *List Mamm. B. M.*, p. 113; *Blyth F. A. S. B.*, xxxii, p. 350; id. *Cat.* no. 397,

- p. 121; *Ferdon Mamm.*, p. 212; *Blanford J. A. S. B.*, xlv, p. 165, pl. x; id. *ibid.*, xlvi, p. 292, pl. i, fig. 10.
Mus hirsutus, *Elliot Madras Journ.*, x, p. 213 (1839).
Mus coffæus, *Kelaart Journ. Ceylon As. Soc.*, v, p. 214 (1850); id. *Prodr. Faun. Zeylan.*, p. 67.
 ? *Golunda newera*, *Kelaart Prodr. Faun. Zeylan.*, p. 67 (1852).
Pelomys watsoni, *Blanford P. A. S. B.*, p. 181 (1876).

Distribution.—The western and southern parts of India and Ceylon; it is recorded from Sind by Blanford.

a-c.	Alc. ♂ ♀ juv.	Goona, C. I.	A. Barclay.
d.	Alc., skull ♀	Madras	J. Anderson.
e-f.	2 Alc. juv.	.....	Madras Museum.
g-j.	3 Alc. ♀ 2 juv.	South India	Sir W. Elliot, A. S. B.
k.	Skin	Satpura Hills, C. P.	V. Ball.
		2-3-74.	
l.	Skin, skull	South India	Sir W. Elliot, A. S. B.
m.	Skin	Ceylon	E. F. Kelaart, A. S. B.

Genus UROMYS.

Uromys, *Peters Monatsber. Akad. Berlin.*, p. 343 (1867). *Type*, *U. macropus*.
Gymnomys, *Gray P. Z. S.*, p. 597 (1867). *Type*, *U. macropus*.

Uromys macropus.

Mus macropus, *Gray P. Z. S.*, p. 221 (1866).
Uromys macropus, *Peters Monatsber. Akad. Berlin*, p. 344, *with plate* (1867); *Collett Zool. J. B.*, ii, p. 840.
Hapalotis caudimaculata, *Krefft P. Z. S.*, p. 316 (1867).
Gymnomys macropus, *Gray P. Z. S.*, p. 597 (1867).

Distribution.—Northern territory and N. Queensland, Australia.

a-b.	2 Alc. ♂ ♀	Cardwell, Queensland,	Brisbane Mus. [Ex.]
	2 skulls.	9-80.	

Genus HAPALOTIS.

Hapalotis, *Lichtenstein Darstel.* pl. xxix (1829). *Type*, *H. albipes*.

Hapalotis apicalis.

Hapalotis apicalis, *Gould P. Z. S.*, p. 126 (1851); *Gould Mamm. Austr.*, iii, pl. ii; *Blyth Cat.* no. 356, p. 111.

Distribution.—South Australia.

a-b.	2 Stuffed	South Australia	Melbourne Mus., A. S. B.
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Hapalotis conditor.

Mus conditor, *Gould Sturt's Narr. Expd. Centr. Austr.*, i, p. 120; ii, app., p. 7*.

Hapalotis conditor, *Gould Mamm. Austr.*, iii, pl. vi (1863).

Distribution.—Australia.

<i>a-b</i> 2 Skins	Gwaler ranges, South Australia.	No history.
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Hapalotis mitchelli.

Dipus mitchellii, *Ogilby Linn. Trans.*, xviii, p. 130 (1841).

Hapalotis mitchellii, *Gould P. Z. S.*, p. 151 (1840); *Gray App. Grey's Travels, Austr.*, ii, p. 404*; *Gould Mamm. Austr.*, pl. ix; *Blyth Cat.* no. 357, p. 111.

Hapalotis gouldii, *Gray App. Grey's Travels, Austr.*, ii, p. 404 (1841)*.

Distribution.—Australia.

<i>a</i> . Skin	Western Australia	No history.
<i>c-d</i> . Stuffed	South Australia	Melbourne Mus., 1861, A.S.B.

Genus *HESPEROMYS*.

Hesperomys, *Waterhouse Zool. Voy. Beagle*, p. 75 (1839)*.

Hesperomys leucopus.

Mus sylvaticus, var. *Erxleben Syst. Reg. Anim.*, i, p. 390 (1775).

Mus agrarius, var. *americanus*, *Kerr Linn. Anim. Kingd.*, p. 231 (1792)*.

Musculus leucopus, *Rafinesque Am. Month. Mag.*, iii, p. 446 (1818)*.

Hesperomys leucopus, *Leconte P. Acad. N. Sci. Philad.*, vi, p. 412 (1854); *Coues Monographs N. Amer. Rodents*, p. 51.

Distribution.—North America, from the Arctic regions to the northern parts of Mexico.

<i>a-b</i> . 2 Skins	Huron County Out., Canada.	J. H. Garnier [Ex.]
<i>c</i> . Skin, skull ♂	Gainsville Flor., U.S.A. (F.M. Chapman, 14-2-89).	Brit. Mus. [Ex.]

Genus *CRICETUS*.

Cricetus, *Pallas Zoog. Ross. As.*, i, p. 160 (1811).

Cricetus phæus.

Mus phæus, *Pallas Nov. Spec. Quad. e Glir.*, p. 261 (1778).

Cricetus phæus, *Pallas Zoog. Ross. As.*, i, p. 163 (1811); *Blanford Persia*, p. 58; id. *Yarkand Mammals*, p. 44; id. *J. A. S. B.*, xlviii, p. 96; *Danford and Alston P. Z. S.*, 1880, p. 61; *Scully P. Z. S.*, 1881, p. 205; *Thomas Linn. Trans.* (2), v, p. 59; *Radde Zool. J. B.*, iv, p. 1032.

Cricetus isabellinus, *Filippi Viaggio Persia*, p. 344 (1865); *Blanford Persia*, p. 59; *Scully P. Z. S.*, 1881, p. 205.

Cricetus fulvus, *Blanford* *J. A. S. B.*, xliv, p. 108 (1875); id. *Yarkand Mammals*, p. 45, pl. ix, fig. 1, pl. xb, fig. 3; id *J. A. S. B.*, xlviii, p. 96; *Scully* *P. Z. S.*, 1881, p. 205.

Distribution.—Central Asia extending westwards to the Caspian and Asia Minor; it has been obtained within the limits of the Indian Empire at Gilgit only.

The three so-called species, *Cricetus phæus*, *C. fulvus*, and *C. isabellinus* do not differ from one another except in size, and even this distinction breaks down when a large series of skins and specimens in alcohol are examined; below are given the measurements in inches of four specimens, the first "g" named isabellinus by Scully, the second "k" fulvus of Scully, the third "h" phæus of Scully; it is, however, due to Scully to add that he himself in his paper was evidently of opinion that the three forms could not be specifically distinguished from one another:—

	"g"	"k"	"h"	"d"
Head and body	4'57	4'30	3'55	4'00
Tail	1'20	1'30	1'20	1'00
Hind-foot	'65	'67	'62	'60
Muzzle to ear	1'10	1'05	'95	'98

a-c. 3 Alc., 1 skull.	♂ Kohrud, North Persia	W. T. Blanford.
d. Alc., skull ♀	" " "	W. T. Blanford.
e-f. 2 Alc. ♂ ♀	Shiraz	W. T. Blanford.
g-j. 3 Alc. ♂	Gilgit	J. Scully.
h. Alc. ♀	.....	J. Scully.
l-m. 2 Alc. juv.	.....	J. Scully.
n-q. 4 Skins, ♂ ♀ 1 skull.	Kohrud, North Persia, 20-7-72, 7,000 feet.	W. T. Blanford.
r-t. 3 Skins, ♂ ♀ 1 skull.	Shiraz, Persia	Museum Collector.
u. Skin	Mashish, South Persia	W. T. Blanford.
v-w. 2 Skins, 1 skull	Panjah Wakhan, 4-74	F. Stoliczka.
x. Skin, skull	Sirikol, 1-4-74	F. Stoliczka.
y. Skin	Kashgar, 17-12-73	F. Stoliczka.

[Type of *Cricetus fulvus*, Blanford.]

z. Skin	North of Sanju Pass	F. Stoliczka.
a ² . Skin	Sirikol, 1-4-74	F. Stoliczka.
b ² . Skin, skull.	♀ Panjah, 21-4-74	F. Stoliczka.
c ² -d ² . 2 Skins	Yarkand, 20-5-74	F. Stoliczka.
e ² . Skin	Yangihissar, 4-74	F. Stoliczka.
f ² -j ² . 4 Skins	♂ Nultar valley, Gilgit, 7-79.	J. Scully.
k ² -l ² . 2 Skins	♀ " " 7-79	J. Scully.
m ² -n ² . 2 Skins	♂ Yarkand, 4-75.	J. Scully.
o ² . Skull	Kohrud, North Persia	W. T. Blanford.
p ² . Skeleton	♂ " " "	W. T. Blanford.

♀ ² . 2 Skulls	Yarkand Exped.	F. Stoliczka.
♀ ² . Alc. skull ♀	Sarikol, 4-4-74.	F. Stoliczka.

[With "y" a co-type of *C. fulvus*, Blanford.]

s ² -t ² . 2 Alc. ♂ ♀	.....	F. Stoliczka.
u ² . Alc. skull ♀	Quetta.	Sir O. St. John.
v ² -s ² . 5 Skins	Gilgit, 4-78.	J. Biddulph.

Genus **CRICETOMYS**.

Cricetomys, *Waterhouse P. Z. S.*, p. 2 (1840). *Type*, *C. gambianus*.

Cricetomys gambianus.

Cricetomys gambianus, *Waterhouse P. Z. S.*, p. 2 (1840); *Thomas P. Z. S.* (1888), p. 10.

Distribution.—Western and Central Africa.

a. Skin	♀	Gadda Monbattu,	Brit. Mus. [Ex.]
		C. Africa (Emin Pasha,	
		8-2-84.)	

Genus **FIBER**.

Fiber G. Cuvier Tableau Gen. in Leçon d'Anat. Comp., 1st ed. (1800)*.
Type, *F. zibethicus*.

Fiber zibethicus.

Castor zibethicus, *Linnaeus Syst. Nat.*, 12th ed., i, p. 79 (1766).
Fiber zibethicus, *G. Cuvier Regne Anim.*, 1st ed., i, p. 192 (1817); *Blyth Cat.* no. 405, p. 123; *Coues Monographs N. Amer. Rodents*, p. 254.
Ondatra zibethicus, *Lesson Man. Mamm.*, p. 286 (1827).

Distribution.—North America.

a. Skin	Huron Co. Ont., Canada.	J. H. Garnier [Ex.]
b. Skull	Upton, Maine, U.S.A.	W. Theobald.
c. Skull	Massachusetts, U.S.A.	W. Theobald.
d. Stuffed	N. America	E. Rüppell (1855), A.S.B.

Genus **ARVICOLA**.

Microtus, *Schrank Faun. Boic.*, i, p. 66 (1789)*.
Arvicola, *Lacépède Tableau*, p. 10 (1803)*.
Lemmus, *Tiedemann Zool.*, i, p. 473 (1808).
Hypudæus, *Illiger Prodr.*, p. 87 (1811).
Myodes, *Pallas, Zoog. Ross. As.*, i, p. 172 (1831).
Brachyurus, *Fischer Zoognosie*, 3rd ed., viii, p. 55 (1814)*.
Phaiomys, *Blyth J. A. S. B.*, xxxii, p. 89 (1863). *Type*, *A. blythii*.
Neodon, *Hodgson Ann. Mag. N. H.* (2), iii, p. 203 (1849). *Type*, *A. sikimensis*.

The oldest name for this genus is undoubtedly *Microtus*, a name which has recently been re-discovered by Lataste who has paid considerable attention to this group of Mammals; this same author has recently proposed a new set of subgenera for the Palæartic species which do not seem to differ very essentially from those proposed by Blasius, and since Lataste has not taken the Himalayan forms into consideration and Blanford's excellent paper on the Himalayan forms was founded on Blasius' scheme, this latter has been adopted in the catalogue of the specimens enumerated below.

The Himalayan voles are scarce in collections owing doubtless to the fact that they only occur in very remote and inaccessible places and at great heights above the sea, and it seems probable that the number of species may be reduced when a larger number of specimens are obtained.

The following synopsis of the Indian species is adopted from Blanford's paper before quoted.

Key of the Indian Species.

a. The anterior upper molar has three angles in, and outside, the 2nd two inside and three out. The ant. lower m. has normally seven spaces.

b. The post. upper m. terminates in a narrow longitudinal process. [= Sub-genus *Alticola*].

c. The post. upper m. has two strong internal angles and four weak outer angles; thumb rudimentary and clawless.

d. The post. lobe of the post. upper m., behind the second inner angle, is less than half the length of the tooth.

***A. stoliczkanus*, p. 89.**

*d*². The post. lobe of the post. upper m., behind the second inner angle, is half the length of the tooth.

***A. stracheyi*, p. 90.**

*e*². The post. upper m. has two internal and two external angles, the thumb is clawed and the ears are short.

***A. wyneei*, p. 90.**

*e*³. The post. upper m. has three angles on either side; the thumb is clawed.

e. In the ant. upper m. the first inner angle is proximal to the first outer; ears short.

***A. roylei*, p. 91.**

*e*². In the ant. upper m. the first inner angle is distal to the first outer; ears large and projecting; tail half the length of head and body.

***A. blanfordi*, p. 91.**

b². The post. upper m. does not terminate behind in a longitudinal process, but is somewhat transversely elongated; thumb clawed and ears small. [=Sub-genus *Paludicola*].

f. The post. upper m. has three external angles and the first lower m. four. **A. blythi**, p. 91.

a². The ant. upper m. has four angles inside and three out, the 2nd three inside and out; the ant. lower m. with normally nine spaces; thumb clawed; ears projecting.

[=Sub-genus *Neodon*]. **A. sikimensis**, p. 93.

Sub-genus MYODES.

Arvicola glareolus.

Mus glareolus, *Schreber Säugeth., Atlas*, pl. cxcx (1792).

Mus rutilus, var. *Pallas Nov. Spec. Quad. e Glir.*, p. 246 (1774).

Arvicola fulvus, *Millet Faune de Maine et Loire* (1828)*.

Arvicola riparia, *Yarrell, P. Z. S.*, p. 109 (1832).

Lemmus rubidus, *Baillon Mem. Soc. Abbeville* (1830)*.

Hypudacus hercynicus, *Mehlis Isis*, p. 874, pl. vii, fig. 8 (1831).

Arvicola rufescens, *Selys-Longchamps Campagnols de Liège*, p. 13, pl. iv (1836).

Hypudius nageri, *Schinz Synops. Mamm.*, ii, p. 237 (1845).

Arvicola glareolus, *Blasius Säugeth. Deutschl.*, p. 337 (1857); *Blyth Cat.* no. 408, p. 124.

Arvicola bicolor, *Fatio Rev. Mag. Zool.* (2), xiv, p. 257, pl. xii (1862).

Distribution.—Central Europe from England to Russia.

a-c. 3 Skins, 1 skull	France.	A. Malherbe (1842), A.S.B
d. Alc. and skull ♂	Norway.	Christiania Univ. (1846), A.S.B.
e-h. 4 Skins and skulls.	England.	Sir W. Jardine, A.S.B.

Sub-genus ALTICOLA.

Arvicola stoliczkanus.

Arvicola stoliczkanus, *Blanford J. A. S. B.*, xliv, p. 107 (1875); id. *Yarkand Mamm.*, p. 42, pl. viii, fig. 1, pl. xb, fig. 2; id. *J. A. S. B.*, l, p. 97.

Distribution.—Only known from the two specimens mentioned below from the Kuenlun mountains in Northern Ladak.

a. Skin, skull	Aktagh, Yarkand R., 13-10-73.	F. Stoliczka.
b. Skin.	Nubra Valley	Dr. Bellew.

[Co-types of *A. stoliczkanus*, Blanford.]

Arvicola stracheyi.

Arvicola stracheyi, *Thomas Ann. Mag. N. H.* (5), vi, p. 332 (1880); *Blanford F. A. S. B.*, i, p. 98, pl. i, fig. c.

Distribution.—The type specimen was procured by General Strachey in the Kumaon, and the specimen catalogued below was procured in the Kangra district in the Punjab Himalayas; no other specimen has been recorded.

The only specimen in the collection, which was obtained from the stomach of a snake (*Halys himalayanus*) is a young one as is proved by the teeth; it agrees best with the description given of *A. stracheyi* but differs even from this in certain particulars; the ventral surface is brown like the dorsal surface, whereas in *A. stracheyi* the ventral surface is said to be gray; the ears are but sparsely covered with hair except at their tips where the hair certainly is thicker; the tail is also the same colour as the body; with these exceptions the specimen is in entire harmony with the description of *A. stracheyi* given by Blanford (*l. c.*); there does not therefore seem to be any justification for describing a new species.

The following are the measurements:—head and body, 3·2; tail, *77; tarsus, *55.

There are only five tarsal pads as is *A. wynnei*, one at the base of each toe and one proximal one on the inner side, at the edge of the hairs which cover the posterior portion of the tarsus.

a. Alc. skull. ♂ Dharmsala, Himalayas, H. Mostyn Clark.
16,000 ft.

Arvicola wynnei.

Arvicola wynnei, *Blanford F. A. S. B.*, xlix, p. 244 (1880); id. *F. A. S. B.*, i, p. 99, pl. i, fig. b.

Arvicola roylei, *apud Blyth F. A. S. B.*, xxxii, p. 89 (1863); id. *Cat.* no. 410, p. 125.

Distribution.—Only known with certainty from Murree in the North-West Himalayas, and from Sonemarg in Kashmir.

The specimen below is said in Blyth's Catalogue to have come from Pind Dadun Khan in the Punjab; a reference, however, to *J. A. S. B.*, xxxii, p. 89, shows that the specimen came from the "Bala" Pass, probably the same as the Babeh Pass in Spiti; this specimen was identified by Blyth with *A. roylei* of Gray; the skull on examination, however, shows that it is certainly not *A. roylei*, but one of those forms in which the posterior upper molar possesses two, not three, internal angles, and as the thumb is distinctly clawed, it must be identified rather with *A. wynnei* than with *A. stracheyi* or *A. stoliczkana* which are the other two forms in which the posterior upper molar has two internal angles.

a. Skin, skull "Bala Pass" W. Theobald (1853), A.S.B.

- b. Alc., skull ♀ No history.
 c. Skin, skull nr. Sonemarg, Kashmir F. Stoliczka.

Arvicola roylei.

Arvicola roylei, Gray *Ann. Mag. N. H.*, x, p. 265 (1842); *Ferdon Mamm.*, p. 216?; *Blanford F. A. S. B.*, 1, p. 102, pl. i, fig. d.

Distribution.—The type and only other specimen known were both obtained in Kashmir.

The specimen catalogued below agrees fairly well with the description of *A. roylei* as given by Blanford (*l. c.*), unfortunately the hinder part of the skull is wanting and with it the posterior upper molar which is so important for the discrimination of the species of this genus; it is not therefore absolutely certain that the specimen should be referred to this species.

- a. Skin, skull Chamba, Kashmir J. Anderson.

Arvicola blanfordi.

Arvicola blanfordi, Scully *Ann. Mag. N. H.* (5), vi, p. 399 (1880); *id. P. Z. S.*, 1881, p. 206; *Blanford F. A. S. B.*, 1, p. 104, pl. i, fig. e.

Distribution.—This species has only been found in the Gilgit district at an elevation of from 9,000 to 10,000 feet.

- a-b. 2 Alc., ♂ ♀ Gilgit, 7-79. J. Scully.
 2 skulls.

[Co-types of *A. blanfordi*, Scully.]

- c-d. 2 Skins ♂ Nultar Valley, Gilgit, J. Scully.
 18-7-79.

- e. Skin skull " " " J. Scully.

Sub-genus PALUDICOLA.

Arvicola blythi.

Phaiomys leucurus, Blyth *F. A. S. B.*, xxxii, p. 89 (1863); *Theobald F. A. S. B.*, xxxi, p. 519; *Blyth Cat.* no. 412, p. 125. [*nec Gerbe.*]

Arvicola blythi, *Blanford, F. A. S. B.*, xlv, p. 107 (1875); *id. Yarkand Mammals*, p. 39, pl. viii, fig. 2, pl. xb, fig. 1; *id. F. A. S. B.*, 1, p. 106, pl. ii, fig. b.

Distribution.—Western Thibet.

- a. Alc. skull. ♂ Tsomoriri, Western W. Theobald, A.S.B.
 Ladak, 14,000 ft. 17-8-61.

[Type of *Phaiomys leucurus*, Blyth.]

- b. Alc., skull ♂ Tanksee, Thibet, F. Stoliczka.
13,000, ft. 17-9-73.
c. Alc. ♂ Pankong Lake, Thibet, F. Stoliczka.
20-9-73.
d-e. 2 Skins. Tanksee, 17-9-73 F. Stoliczka.
f. Skin. Pankong Lake, Thibet, F. Stoliczka.
20-9-73.
g. Skin, skull. Yarkand Exped. F. Stoliczka.

Arvicola amphibius.

- Mus amphibius, *Linnaeus Syst. Nat.*, 12th ed., i, p. 82 (1766).
Mus terrestris, *Linnaeus Syst. Nat.*, 12th ed., i, p. 82 (1766).
Lemnus schermaus, *F. Cuvier. Dict. Sci. Nat.*, vi, p. 307 (1817).
Arvicola argentoratensis, *Desmarest Mamm.*, p. 281 (1820).
Arvicola pertinax, *Savi. Mem. scientif. Pisa* (1828)*.
Arvicola ater, *Macgillivray Mem. Wern. Soc.*, vi, p. 424 (1832).
Arvicola monticola, *Selys-Longchamps Rev. Zool. Soc. Cuv.*, p. 249 (1838).
Arvicola musignani, *Selys-Longchamps Rev. Zool. Soc. Cuv.*, p. 8 (1839).
Arvicola destructor, *Savi Giorn. Lett. Pisa*, p. 102 (1839)*.
Arvicola amphibius, *Blasius Säugeth. Deutsch.*, p. 344 (1857); *Blyth Cat.*
no. 406, p. 124.

The Water Rat.

Distribution.—The whole Palæartic region.

- a. Skin R. C. Tytler, A.S.B.
b-c. 2 Skins and Cambridgeshire Brit. Mus. [Ex.]
skulls.
d. Alc., skull ♀ Norway Christiania Univ. (1856), A.S.B.
e-f. 2 Stuffed England A. D. Bartlett (1842), A.S.B.
g. Stuffed Montrose Museum, A.S.B.
h. Skeleton England J. H. Gurney (1860), A.S.B.
mtd.

Arvicola nivalis.

- Arvicola nivalis, *Martins Rev. Zool. Soc. Cuv.*, p. 331 (1842); *Blasius Säugeth. Deutsch.*, p. 359; *Blyth Cat.*, no. 407, p. 124.
Hypudaeus alpinus, *Wagner Schreber Säugeth., Suppl.*, iii, p. 576 (1843).
Arvicola lebrunii, *Crespon, Faune Merid.*, i, p. 77 (1844)*.
Arvicola leucurus, *Gerbe Rev. Mag. Zool.*, p. 260, pl. xi (1852)*.
Hypudaeus petrophilus, *Wagner, Münch Gel. Anz.*, p. 307 (1853).

Distribution.—The Alpine regions of Europe, including the Pyrenees.

- a. Skin Mt. St. Gothard A. Malherbe, A.S.B.

Sub-genus AGRICOLA.

Arvicola agrestis.

- Mus agrestis, *Linnaeus Faun. Suec.*, p. 11, no. 30 (1761).
Mus gregarius, *Linnaeus Syst. Nat.*, 12th ed., i, p. 84 (1766).

- Lemnus insularis*, Nilsson *Kongl. Vetens. Akad. Oefvers.*, p. 34 (1844)*.
Arvicola baillonii, Selys-Longchamps *Act. Congrès Turin* (1840)*.
Arvicola neglecta, Fenyns. *Ann. Mag. N. H.*, vii, p. 270 (1841).
Arvicola brittanicus, Selys-Longchamps *Rev. Zool. Soc. Cuv.*, p. 307 (1847).
Arvicola arvalis, *apud Blyth Cat.*, no. 409, p. 125 (1863).

Distribution.—Northern Europe.

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|----------------|---------|-------------------------------|
| a. Skin, skull | England | A. D. Bartlett (1843), A.S.B. |
| b. Alc. | London | A. D. Bartlett. |
| c. Skin, skull | England | A. D. Bartlett, A.S.B. |

Sub-genus ARVICOLA.

Arvicola guentheri.

- Arvicola guentheri*, Danford and Alston *P. Z. S.*, p. 62, pl. v (1880);
Scully J. A. S. B., lvi, p. 72.
 ? *Arvicola leucura*, Severtzoff *Turkest. Fevot.*, p. 82 (1873); *id. Ann. Mag. N. H.* (4) xviii, p. 52 [*nec Gerbe.*]

Distribution.—The type was obtained at Marash in the Taurus of Asia Minor; the specimen in the collection is from Afghan-Turkistan, the species is therefore probably to be found in the intervening country.

- | | | |
|----------------|------------------|-------------|
| a. Skin, skull | Afghan-Turkestan | C. E. Yate. |
|----------------|------------------|-------------|

Sub-genus NEODON.

Arvicola sikimensis.

- Neodon sikimensis*, Hodgson *Ann. Mag. N. H.* (2), iii, p. 203 (1849);
id. Cat. E. I. Mus., p. 145; *Gray Cat. Hodgs. Coll.*, 2nd ed., p. 11;
Blyth Cat. no. 411, p. 125; *Ferdon Mamm.*, p. 217.
Arvicola ? *thricolis* (*thricotis*), *Gray Cat. Hodgs. Coll.*, 2nd ed., p. 10.
Arvicola sikimensis, Blanford *J. A. S. B.*, l, p. 110, pl. i, fig. a (1881).

Distribution.—Sikkim from 7,000 to 10,000 ft. in the forests.

- | | | |
|------------------|------------|----------|
| a. Alc., skull ♂ | Darjeeling | G. King. |
|------------------|------------|----------|

Genus HYPUDAEUS.

Hypudaeus, Illiger *Prodr.*, p. 87 (1811).

Hypudaeus lemnus.

- Mus lemnus*, Linnæus *Syst. Nat.*, 12th ed., i, p. 80 (1766).
Hypudaeus lemnus, Illiger *Prodr.*, p. 87 (1811); *Blyth Cat.* no. 413, p. 126.
Lemmus norvegicus, Desmarest *Mamm.*, p. 287 (1820).

The Lemming.

Distribution.—Scandinavia.

a-b. 2 Stuffed Norway

Christiania University, A.S.B.

Genus ELLOBIUS.

Ellobius, *Fischer Zoognosia*, iii, p. 72 (1814)*. *Type*, *E. talpinus*.

Myospalax, *Blyth J. A. S. B.*, xv, p. 141 (1846). *Type*, *E. fuscicapillus*.

Ellobius fuscicapillus.

Georychus fuscicapillus, *Blyth, J. A. S. B.*, x, p. 928 (1841); id. *J. A. S. B.*, xi, p. 887.

Myospalax fuscicapillus, *Blyth J. A. S. B.*, xv, p. 141 (1846); id. *Cat.* no. 414, p. 126.

Ellobius fuscicapillus, *Blanford J. A. S. B.*, l, p. 119, pl. ii, fig. d (1881); *Thomas Linn. Trans.* (2), v, p. 59.

Ellobius intermedius, *Scully, J. A. S. B.*, lvi, p. 73 (1887).

The Quetta Mole.

Distribution.—Afghanistan, has been obtained from various places in Afghan-Turkistan and from Quetta.

Thomas, after examining the Afghan boundary specimens of *Ellobius*, has come to the conclusion that the characters whereby it was distinguished as a separate species by Scully do not hold good when a considerable number of specimens are examined; *E. intermedius* has therefore been merged with *E. fuscicapillus*.

Besides the original type of the genus, *E. talpinus*, a second Central Asiatic species has recently been described, *Ellobius tancrei* from the Altai by Blasius (*Zool. Anz.*, vii, p. 197).

a-d. 4 Skins, Quetta T. Hutton (1846), A.S.B.
1 skull.

e. Skin, skull ♀ Killa, Wali, Herat, 5-86 C. E. Yate.

[Type of *Ellobius intermedius*, Scully.]

f. Skin, skull ♂ Killa Wali, Herat, 5-86 C. E. Yate.

g. Skin ♂ Bokum, Herat, 5-86 C. E. Yate.

h. Alc. ♀ Gulran, Herat J. E. T. Aichison.

Genus SPALAX.

Spalax, *Guldenstadt Nov. Comm. Acad. Petrop.*, xiv, pt. i, p. 409 (1770).

Spalax typhlus.

Mus typhlus, *Pallas Nov. Sp. Quad. e Glir.*, p. 154 (1778).

Spalax microphthalmos, *Guldenstadt Nov. Comm. Acad. Petrop.*, xiv, pt. i, p. 411 (1770).

Spalax pallasii, *Nordmann Bull. Acad., St. Peters.* v, p. 200 (1835)*.

Spalax xanthodon, *Nordmann in Demidoff Voyage dans la Russie*.
Spalax typhlus, *Blasius Säugeth. Deutsch.*, p. 400 (1857); *Blyth Cat.* no. 415, p. 126; *Radde Zool. J. B.*, iv, p. 1044.

Distribution.—South-Eastern Europe and Western Asia, extending to the eastern shores of the Caspian Sea, and to Mesopotamia and Syria.

a-b. 2 Alc. 1 skull ♂ Hungary
 and juv.

Hungarian Mus., A.S.B.

c. Skin Sarepta, Russia

Brit Mus. [Ex.]

d. Stuffed Beyrout

J. C. Parker (1855), A.S.B.

Genus RHIZOMYS.

Rhizomys, *Gray P. Z. S.*, p. 95 (1831); *Type*, *R. sinensis*.

Nyctocletes, *Temminck Monogr. Mamm.*, ii, p. 42 (1835-41); *Type*, *R. sumatrensis*.

Anderson has monographed this genus in his *Anatomical and Zoological Researches*, and his account, which is illustrated by plates of several of the species, is so complete that there is nothing additional to be added; representatives of all the species except *Rhizomys minor* from Siam and *Rhizomys sinensis* from China, will be found catalogued below.

Key of the Indian Species.

a. Somewhat larger, head and body from 9 to 12 inches in length.

b. Fur soft, thick and brown with longer white-banded hairs causing a grizzled appearance; sides of the face pale.

R. pruinus, p. 96.

b.² Fur harsh, no under fur, with a dark median streak on the top of the head; cheeks and sides of the head bright red.

R. erythrogenys, p. 96.

a.² Somewhat smaller, head and body about 7 inches in length, fur very soft and thick, the basal two-thirds uniformly gray the apical third bright chestnut, most intense on the head.

R. badius, p. 97.

Rhizomys sumatrensis.

Mus sumatrensis, *Raffles Linn. Trans.*, xiii, p. 258 (1822).

Rhizomys sumatrensis, *Gray P. Z. S.*, p. 95 (1831); *Cantor J. A. S. B.*, xv, p. 255; *Blyth Cat.* no. 400, p. 122; *id. J. A. S. B.*, xlv, *Burma List*, p. 41; *Anderson Anat. Zool. Res.*, p. 322.

Spalax javanus, *G. Cuvier Regne Anim.*, 2nd ed., i, p. 211 (1829).

Nyctocleptes dekan, *Temminck Monogr. Mamm.*, ii, p. 44, pl. xxxiii (1835-41); *Gervais Voyage Bonite Zool.*, i, p. 54, pls. x, xi, figs. 1-3*.

Rhizomys cinereus, *McClelland, Calc. Journ. N. H.*, ii, p. 456 (1842).

Rhizomys dekan, *Schinz Synops. Mamm.*, ii, p. 123, (1845) [pt.]; *Jentink Notes Leyd. Mus.*, xi, p. 28.

Distribution.—The Malay peninsula and Sumatra (Jentink); there is no record of its occurrence in Tenasserim; the species occurring there being *R. erythrogenys*.

a. Skin	♂	Malacca	India Mus., London
b. Skin		Alma Tapioca Estate, Wellesley Prov.	W. Davison.
c. Skin	♂	.....	W. Rutledge.
skeleton.			
d-e. 2 Stuffed,		Malacca	Messrs. Frith and Lindstedt,
1 skull.			A.S.B.
f-g. 2 Stuffed		"	Messrs. Frith and Lindstedt,
			A.S.B.
h-j. 2 Alc.	♀	.....	Zoological Gardens.
k. Skin	juv.	Malacca (Cantor)	India Mus., London.

Rhizomys erythrogenys.

Rhizomys erythrogenys, *Anderson P. A. S. B.*, p. 148 (1877); id. *Anat. Zool. Res.*, p. 324, pl. xiii a; id. *J. Linn. Soc.*, xxi, p. 341.

Red-cheeked Bamboo Rat; Pwai of Tenasserim.

Distribution.—Shan States of Upper Burma and Mergui.

This species resembles *R. sumatrensis*, from which it is distinguished by its red cheeks, the dark occipital line extending forwards to between the eyes, and the absence of any trace of the white mark characteristic of the young and adolescent *R. sumatrensis*; the skull is intermediate in character between *R. sumatrensis* and *R. badius*.

a. Skin in bad condition and skeleton.	}	Salween Hill Tracts	Zoological Gardens.
		(A. H. Hildebrand)	
b. Stuffed		Tenasserim	S. R. Tickell, A. S. B.
[Co-types of <i>R. erythrogenys</i> , Anderson.]			
c-d. 2 Skins, ♂ juv.		Mergui, 1-82	J. Anderson.
2 skeletons, ♀ juv.			
e. Alc., skull juv.		Mergui	J. Anderson.

Rhizomys pruinus.

Rhizomys pruinus, *Blyth J. A. S. B.*, xx, p. 519 (1851); id. *Cat. no. 401*, p. 122; id. *J. A. S. B.*, xlv, *Burma List*, p. 41; *Anderson Anat. Zool. Res.*, p. 325, pls. xiii, xvi.

Bamboo Rat.

Distribution.—This species is found in the Kashia and Naga hills of Assam, whence it extends through the Manipur hills to the

Kakhyen hills in Upper Burma where it was procured by Anderson.

a-c. 3 Skins	Kashia hills, Assam	T. laTouche.
d. Skin ♀	Naga hills	A. W. Chennell.
e. Skin	Tellizo Peak, Naga hills	H. H. Godwin Austen.
f. Skin, skeleton.	" "	H. H. Godwin Austen.
g. Skin, skeleton ♂ juv.	Iril R., Manipur	H. H. Godwin Austen.
h. Skin, skeleton ♂	Pouline, Kakhyen hills, 17-2-75	J. Anderson.
j. Skin, skeleton ♀	Pouline, Kakhyen hills, 17-2-75	J. Anderson.
k. Skin, skeleton mtd. ♀	nr. Tsitkaw, Kakhyen hills, 2-75	J. Anderson.
l-n. 3 Stuffed	Cherrapoonjee, Assam	F. Skipwith, A. S. B.
[Types of <i>Rhizomys pruinosis</i> , Blyth.]		
o-p. 2 Alc. ♂	Ponsee, Kakhyen hills	J. Anderson.
q-t. 4 Alc. ♀	" "	J. Anderson.
u-y. 5 Alc. juv.	Kakhyen hills	J. Anderson.
z. Viscera in alc.	" "	J. Anderson.
a ² . Skull juv.	" "	J. Anderson.

Rhizomys badius.

Rhizomys badius, *Hodgson Calc. Journ. N. H.*, ii, p. 60 (1842); *Gray Cat. Hodgs. Coll.*, 1st ed., p. 24; *Blyth J. A. S. B.*, xii, p. 925; *Horsfield Cat. E. I. Mus.*, p. 165; *Blyth Cat.* no. 402, p. 122; *Ferdon Mamm.*, p. 214; *Anderson Anat. Zool. Res.*, p. 329, pls. xiv, xvi; *Thomas P. Z. S.*, 1886, pp. 65, 71.

Rhizomys castaneus, *Blyth J. A. S. B.*, xii, p. 1007 (1843); *id. Cat.* no 403, p. 123; *Blanford J. A. S. B.*, xxxvi, p. 198; *Blyth J. A. S. B.*, xliv, *Burma List*, p. 41; *Blanford J. A. S. B.*, xlvii, p. 165.

Distribution.—This species has a somewhat wider range than the last. It is found in the Himalayas from Nepal eastwards and extends through Assam, Manipur, Arakan, and Burma, but does not seem to be found further south than the northern part of Tenasserim.

a. Skin	Nepal (Hodgson)	India Museum, London.
b-c. 2 Skins	Naga hills	J. Butler.
d. Skin ♂	" "	A. W. Chennell.
e-f. 2 Skins ♀	Tsitkaw, Kakhyen hills	J. Anderson.
g. Skin	" "	J. Anderson.
h. Skin, ♂ skeleton.	Chenga, Darjeeling ?	Zoological Gardens.
j-k. 2 Stuffed, 1 skull.	Sikkim Terai	W. T. Blanford, A. S. B.
l-m. 2 Stuffed, skeleton. mtd.	Arakan	Sir A. Phayre (1843), A. S. B.

[Types of *Rhizomys castaneus*, Blyth.]

n. Stuffed	Prome, Pegu	W. T. Blanford, A. S. B.
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o. Skeleton mtd nr. Bhamo			J. Anderson.
p. Skeleton			♀
q-r. 2 Alc. ♂ ♀ Sikkim		 Zoological Gardens.
s. Alc. ♂ Lingling, Et. Sikkim			G. King.
t. Alc. ♂ Cherrapoonjee, Assam			T. Johnston.
u. Alc., skull ♂ Cachar			H. H. Godwin Austen.
v. Alc. ♀ Manipur			J. Wood Mason.
w. Alc. ♂ Kakhyen hills			Col. Johnston.
x. Alc. ♀ Shwegyin, Tenasserim			J. Anderson.
			Major Berdmore, A. S. B.

Genus BATHYERGUS.

Bathyergus, Illiger Prodr., p. 86 (1811). Type, *B. maritimus*.

Bathyergus maritimus.

Mus maritimus, Gmelin Syst. Nat., i, p. 140 (1788).

Mus suillus Schreber Säugeth., iv, p. 715, pl. ccivb. (1792).

Bathyergus maritimus, Illiger Prodr., p. 86 (1811); Blyth Cat. no. 416, p. 126.

Distribution.—South Africa.

a-c. 3 Stuffed W. S. Sherwill, A.S.B.

Bathyergus splendens.

Bathyergus splendens, Rüppell N. Wirbelth., p. 36, pl. xii (1835); Blanford Abyssinia, p. 279.

Distribution.—North-East Africa (Abyssinia).

a-b. 2 Skins ♂ ♀ Lake Ashangi, Abyssinia. W. T. Blanford.

c. Skeleton Lake Ashangi, Abyssinia. W. T. Blanford.

Genus GEORYCHUS.

Georchus, Illiger Prodr., p. 87 (1811). Type, *G. capensis*.

Georchus cæcutiens.

Bathyergus cæcutiens, Brants Muizen, p. 37 (1827).

Bathyergus hottentottus, Lesson et Garnot Bull. Sci. Nat., viii, p. 96 (1826).

Georchus cæcutiens, Schinz Synops. Mamm., ii, p. 127 (1845); Blyth Cat. no. 418, p. 127

Distribution.—South Africa.

a-c. 3 Stuffed W. S. Sherwill and E. L. Layard, A. S. B.

Georychus capensis.

Mus capensis, Pallas *Nov. Sp. Quad. e Glir.*, p. 172 (1778).

Georychus capensis, Illiger *Prodr.*, p. 87 (1811); *Blyth Cat.*, no. 417, p. 127.

Distribution.—South Africa.

a. Skin

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E. L. Layard (1860), A. S. B.

Genus GEOMYS.

Geomys, Rafinesque, *Am. Month. Mag.*, ii, p. 45 (1817)*.

Diplostoma, Rafinesque, *Am. Month. Mag.*, ii, p. 45 (1817)*.

Saccophorus, Kuhl *Beitr. Zool.*, p. 65 (1820). *Type*, *G. bursarius*.

Pseudostoma, Say *Long's Exped. Rock. Mts*, i, p. 406 (1823)*.

Ascomys, Lichtenstein *Abhand. Akad. Berlin*, 1822-3, p. 20 (1825). *Type*, *G. bursarius*.

Geomys bursarius.

Mus bursarius, Shaw *Linn. Trans.*, v, p. 227, pl. viii (1800).

Geomys cinereus, Rafinesque *Am. Month. Mag.*, ii, p. 45 (1817)*.

Saccophorus bursarius, Kuhl. *Beitr. Zool.*, p. 65 (1820).

Pseudostoma bursarius, Say *Long's Exped. Rock. Mts*, i, p. 406 (1823)*.

Ascomys canadensis, Lichtenstein *Abhand. Akad. Berlin*, 1822-3, p. 13 (1825).

Geomys bursarius, Richardson *Ann. Rep. B. Assoc.*, vi, p. 150 (1837); *Coues Monographs N. Amer. Rodents.*, p. 612.

Geomys drummondii, Richardson *Ann. Rep. B. Assoc.*, vi, p. 157 (1837).

Geomys oregonensis, Leconte *P. Acad. N. Sci. Philad.*, vi, p. 160 (1854).

Geomys breviceps, Baird *P. Acad. N. Sci. Philad.*, vii, p. 335 (1856).

The Pocket Gopher.

Distribution.—Central States of North America, the valley of the Mississippi in a board sense.

a-b. 2 Skins ♂ ♀ Texas, 2-84

J. H. Garnier [Ex.]

Genus ZAPUS.

Zapus, Coues *Bull. U. S. Geol. Surv. Terr.* (2), no. 5, p. 253 (1876) *Type*, *Z. hudsonius*.

Zapus hudsonius.

Dipus hudsonius, Zimmermann *Geogr. Geschichte*, ii, p. 358 (1780).

Dipus canadensis, Davies *Linn. Trans.*, iv, pl. viii, figs. 5-6, p. 157 (1798).

Dipus americanus, Barton *Trans. Amer. Philos. Soc.*, iv, p. 115 (1799).

Dipus labradorius, Turton, *Syst. Nat.*, i, p. 99 (1806)*.

Meriones microcephalus, Harlan *P. Z. S.*, p. 1 (1839).

Meriones accadians, Dawson *Edin. Philos. Journ.*, iii, p. 2, pl. i (1856).

Zapus hudsonius, Coues *Bull. U. S. Geol. Surv. Terr.* (2), no. 5, p. 254 (1876); *id. Monographs N. Amer. Rodents.*, p. 467.

Distribution.—North America generally from lat. 62° southwards.

a. Alc.

Pelee Ont., Canada

J. H. Garnier [Ex.]

Genus **DIPUS**.

Dipus Schreber, Säugeth., iv, p. 840 (1792).

Dipus lagopus.

Dipus lagopus, *Lichtenstein, Eversmann Reise nach Buchara*, p. 121 (1823); *Brandt Bull. Acad. St. Petersb.*, ii, p. 218*; *Blanford Yarkand Mamm.*, p. 58; *Severtzoff Ann. Mag. N. H.* (4), xviii, p. 56.

Distribution.—Western and Eastern Turkistan.

a. Skln, skull	Yarkand, 20-5-74	F. Stoliczka.
b. Skin	Yangihissar, 4-74	F. Stoliczka.
c. Skin	Koshtak, 2-4-73	F. Stoliczka.
d. Skin, skull ♂	Yarkand, 28-7-75	J. Scully.
e-f. 2 Skins, 1 skull	Kilian, Turkestan	C. Ellis.
g. Alc.	♂ Turkestan	C. Ellis.

Dipus blanfordi.

Dipus macrotarsus, *apud Blanford, Persia*, p. 74 (1876).

Dipus blanfordi, *Murray Ann. Mag. N. H.* (5), xiv, p. 98 (1884).

Distribution.—Persia generally.

The specimen below was identified with considerable doubt by Blanford with *Dipus macrotarsus* of Wagner; since that time several more specimens exhibiting the peculiar colouration of Blanford's specimen have been procured for the Karachi Museum, and Murray has given the species a new name; whether it will really turn out to be distinct from the true *D. microtarsus* which was got from Sinai, can only be settled by a comparison of the specimen below with Wagner's type now probably in the Berlin Museum.

a. Alc., skull

Kam nr. Teheran

W. T. Blanford.

Dipus jaculus.

Mus jaculus, *Linnaeus Syst. Nat.*, 12th ed., i, p. 85 (1766).

Dipus gerboa, *Olivier Bull. Soc. Philom.*, ii, p. 121 (1800)*.

Dipus bipes, *Lichtenstein Verzeich. Doublett. Mus. Berlin*, p. 5 (1823)*.

Dipus ægyptius, *Lichtenstein Darstell.*, pl. xxii (1827); *Brandt Mem. Acad. St. Petersb.*, ii, p. 217*; *Lataste Ann. Mus. Genoa*, xviii, p. 672.

Dipus mauritanicus, *Duvernoy Mem. Soc. Strasburg*, iii, pt. 2, p. 30, pls. iii, iv (1842); *Blyth Cat.*, no. 351, p. 110.

Distribution.—From North Arabia westwards through Lower Egypt as far as the province of Oran in Algeria.

The specific name *ægyptius* was first used by Hasselquist, a pre-Linnæan writer and is therefore incorrect; as is pointed out by Thomas (*Ann. Mag. N. H.* (5), viii, p. 14), the proper name for this species is *Dipus jaculus* of Linnæus.

a-d. 4 Alc., 1 skull nr. Alexandria, Egypt Purchased.

2 ♂ 2 ♀

e. Alc., skull ♂ Heluan, Egypt

Purchased.

f. Stuffed; skull Algeria

A. Malherbe, A.S.B.

Genus ALACTAGA.

Alactaga, *F. Cuvier Trans. Zool. Soc.*, ii, p. 131 (1841). *Type*, *A. arundinis*. *Scirtetes*, *Wagner Archiv f. Natur.*, vii, pt. 1, p. 119 (1841).

Alactaga decumana.

Mus jaculus, *apud Pallas Nov. Sp. Quad. e Glir.*, p. 275, pl. xx., (1778).

Dipus jaculus, *Gmelin Syst. Nat.*, i, p. 157 (1788) [pt]; *Brandt Bull, Acad. St., Peters.*, ii, p. 220*.

Dipus spiculum, *Lichtenstein Abhand. Akad. Berlin.*, 1825, p. 154, pl. vii (1828).

Dipus ducumana, *Lichtenstein Abhand. Akad. Berlin*, 1825, p. 154, pl. vi (1828); *Blanford Persia*, p. 78.

Dipus vexillarius, *Eversmann Bull. Nat. Mosc.*, p. 42 (1840).

Distribution.—Central Asia extending southwards to Bushire.

a. Skin, skull. nr. Bushire

Sir O. St. John.

Alactaga indica.

Alactaga indica, *Gray Ann. Mag. N. H.*, x, p. 262 (1842); *Hutton J. A. S. B.*, xv, p. 137; *Horsfield Cat. E. I. Mus.*, p. 149; *Blanford Persia*, p. 77; *P. L. Sclater, P. Z. S.*, 1880, p. 538; *Thomas Linn. Trans.* (2) v, p. 60.

Alactaga bactriana, *Blyth Cat. no.* 352, p. 110 (1863).

Distribution.—Afghanistan from the Simkoh hills southwards to Baluchistan and eastwards to Shiraz.

a. Alc., skull

Katru, nr. Shiraz

W. T. Blanford.

b. Skin

Afghanistan (Griffith)

India Mus, London.

c. Stuffed

Afghanistan

Old Collection, A. S. B.

Genus PECTINATOR.

Pectinator, *Blyth J. A. S. B.*, xxiv, p. 294, (1855). *Type*, *P. spekii*.

Pectinator spekii.

Pectinator spekii, *Blyth J. A. S. B.*, xxiv, p. 294 (1855); *Heuglin Nova Acta Acad. Leop. Caro.* (3), viii, 1861, p. 1, pl. ii; *Blyth Cat. no.* 427, p. 130; *Blanford Abyssinia*, p. 281.

Distribution.—North-east Africa, the Somali country and Abyssinia.

a. Skin	Somali country	J. H. Speke, A. S. B.
	[Type of <i>Pectinator spekii</i> , Blyth.]	
b. Skin	Senafe Pass, Abyssinia, 2-68.	W. T. Blanford.
c-d. 2 Skins	Undul weles, Abyssinia, 4-68.	W. T. Blanford.
e-f. 2 Skins	Sooroo Pass, Abyssinia, 6-68.	W. T. Blanford.
g. Skin	Abyssinia	W. T. Blanford.
h-l. 4 Alc.	Undul weles, Abyssinia	W. T. Blanford.
m. Skeleton	Abyssinia	W. T. Blanford.
n. Skeleton in alc.	„	W. T. Blanford.

Genus SCHIZODON.

Schizodon, Waterhouse *P. Z. S.*, p. 91 (1841). *Type*, *S. fuscus*.

Schizodon fuscus.

Schizodon fuscus, Waterhouse *P. Z. S.*, p. 91 (1841); *id. Nat. Hist. Mamm.*, ii p. 265.

Distribution.—Chili.

a. Stuffed	Chili	Brit. Mus. [Ex.]
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Genus SPALACOPUS.

Spalacopus, Wagler *Isis.*, p. 1219 (1832). *Type*, *S. poeppigii*.
Poephagomys, F. Cuvier *Ann. Sci. Nat.* (2), i, p. 321 (1834). *Type*, *S. poeppigii*.
Psammoryctes, Poeppig *Archiv. f. Natur.*, i, pt. 1, p. 252 (1835). *Type*, *S. poeppigii*.

Spalacopus poeppigii.

Spalacopus poeppigii, Wagler *Isis.*, p. 1219 (1832); Waterhouse *Nat. Hist. Mamm.*, ii, p. 269, pl. ix, fig. i; Blyth *Cat.* no. 420, p. 127.
Poephagomys ater, F. Cuvier *Ann. Sci. Nat.* (2), i, p. 321, pl. xiii (1834).
Psammoryctes noctivagus, Poeppig *Archiv. f. Natur.*, i, pt. 1, p. 252 (1835)

Distribution.—Chili.

a. Stuffed	Chili	C. T. Eyton (1849), A. S. B
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Genus OCTODON.

Octodon, Bennett, *P. Z. S.*, p. 46 (1832). *Type*, *O. degus*.
Dendrobis, Meyen *Nova Acta Acad. Leop. Caro.*, xvi, p. 600 (1833). *Type*, *O. degus*.

Octodon degus.

- Sciurus degus*, *Molina Sag. Stor. Nat. Chili*, pp. 303, 342 (1782)*; *Gmelin Syst. Nat.*, i, p. 152.
Octodon cummingii, *Bennett, P. Z. S.*, p. 47 (1832); *id. Trans. Zool. Soc.*, ii, p. 81, pl. xvi.
Octodon pallidus, *Wagner Archiv. f. Natur.*, xi, pt. 2, p. 33 (1845).
Dendrobis degus, *Meyen Nova Acta Acad. Leop. Caro.*, xvi, p. 600, pl. xlv (1833).
Octodon degus, *Waterhouse Nat. Hist. Mamm.*, ii, p. 253 (1848); *Blyth Cat. no. 419*, p. 127.

Distribution.—Chili.

a. Stuffed Chili C. T. Eyton (1846), A. S. B.

Genus SYNETHERES.

- Synetheres*, *F. Cuvier Mem. Mus., Paris ix*, p. 433 (1822). *Type*, *S. prehensilis*.
Cercolabes, *Brandt Mamm. Exot. Nov.*, p. 55 (1835).

Synetheres prehensilis.

- Hystrix prehensilis*, *Linnaeus Syst. Nat.*, 12th ed., i, p. 76 (1766).
Hystrix cuandu, *Desmarest Mamm.*, p. 346 (1820).
Synetheres prehensilis, *F. Cuvier Mem. Mus., Paris ix*, pp. 427, 433, pl. xx ter, figs. 3 and 4 (1822).
Cercolabes prehensilis, *Brandt Mamm. Exot. Nov.*, p. 60, pl. ix, figs. 5-9 (1835); *Waterhouse Nat. Hist. Mamm.*, ii, p. 410.

Distribution.—The Brazilian region of South America.

a. Alc. ♀ Purchased.

Genus ERETHIZON.

- Erethizon*, *F. Cuvier Mem. Mus., Paris ix*, p. 432 (1822). *Type*, *E. dorsatus*.
Echinoprocta, *Gray P. Z. S.*, p. 321 (1865). *Type*, *E. rufescens*.

Erethizon dorsatus.

- Hystrix dorsata*, *Linnaeus Syst. Nat.*, 12th ed., i, p. 76 (1766).
Erethizon dorsatus, *F. Cuvier Mem. Mus., Paris ix*, p. 425, pl. xx ter, figs. 1, 2 & 8 (1822); *Allen Monographs N. Amer. Rodents*, p. 388
Hystrix hudsonius, *Dekay New York Zool.*, i, p. 77, pl. xxvi, fig. 1, pl. viii, fig. 2 (1842).

The Canada Porcupine.

Distribution.—Middle and northerly portions of the North American Continent.

a-b. 2 Skulls Upton, Maine, U. S. A. W. Theobald.

Genus **ATHERURA**.

Atherura, G. Cuvier *Regne Anim.*, 2nd ed., i, p. 215 (1829). *Type*, *A. macroura*.

The skull of the African species of *Atherura* is distinguishable at once from that of the Asiatic species by the fact that the posterior nasal opening is in the former species opposite the last molar, whereas in the latter, it is extended forward to opposite the penultimate molar.

Besides the two species mentioned below, there is a third, the true *A. fasciculata* of Shaw, found only in Siam, in which the caudal bristles are simple and flattened, and not twisted and irregularly dilated.

***Atherura macroura*.**

Hystrix macroura, Linnæus *Syst. Nat.*, 12th ed. i, p. 77 (1766).

Atherura fasciculata, apud G. Cuvier *Regne Anim.*, 2nd ed., i, p. 215 (1829); Cantor *J. A. S. B.*, xv, p. 257; Gray *P. Z. S.*, 1847, p. 104; Horsfield *Cat. E. I. Mus.*, p. 147; Blyth *Cat.* no. 424, p. 129; P. L. Sclater *P. Z. S.*, 1871, p. 236; Blyth *J. A. S. B.*, xliv, *Burma List*, p. 43; Anderson *J.*, Linn. Soc., xxi, p. 341.

Atherura macroura, Waterhouse *Nat. Hist. Mamm.*, ii, p. 472; Blyth *J. A. S. B.*, xx, p. 519; Gunther *P. Z. S.*, 1876, p. 742; Thomas *P. Z. S.*, 1886, p. 71.

Brush-tailed Porcupine.

a-b. 2 Skins, ♂ ♀ Tiboo Padan, Mergui, J Anderson.
2 skeletons, 7-2-82.

c. Skin

d. Stuffed, skull Tipperah

e. Stuffed, skull Malacca

f. Skeleton,
mtd.

No history, A. S. B.

R. W. G. Frith, A. S. B.

Rev. F. Lindstedt, A. S. B.

Zoological Gardens.

***Atherura africana*.**

Atherura africana, Gray *Ann. Mag., N. H.*, x, p. 261 (1842); Waterhouse *Nat. Hist. Mamm.*, ii, p. 476; Gunther *P. Z. S.*, 1876, p. 742.

Distribution.—Western Africa.

a. Skin, skull, W. Rutledge.
and bones ♂

Genus **HYSTRIX**.

Hystrix Linnæus, *Syst. Nat.*, 12th ed., i, p. 76 (1766). *Type*, *H. cristata*.

Acanthion, F. Cuvier *Mem. Mus., Paris*, ix, p. 431 (1822). *Type*, *H. longicauda*.

Ædocephalus, Gray *P. Z. S.*, p. 308 (1866). *Type*, *H. cristata*.

Acanthoechelus, Gray *P. Z. S.*, p. 310 (1866). *Type*, *H. longicauda*.

Key of Indian Species.

- a. Crest well developed; skull with enormously inflated nasal region; the frontal processes of the premaxillae wide, truncated, and extending back as far as the nasals.

H. leucurus, p. 105.

- a². Crest but slightly if at all developed; skull with the nasals not inflated, and the nasals extending further back than the frontal processes of the premaxillae.

- b. Nasal bones expanded behind and extending back to a level with the middle of the orbits; frontal processes of the premaxillae narrow and almost pointed.

H. longicauda, p. 106.

- b². Nasal bones of equal width throughout, and hardly extending backwards to a level with the lacymal bones; frontal processes of the premaxillae wide and truncated.

H. yunnanensis, p. 107.

Hystrix cristata.

Hystrix cristata, *Linnaeus Syst. Nat.*, 12th ed., i, p. 76 (1766); *Brandt Mamm. Exot. Nov.*, p. 35, pl. viii, figs. 1-2; *Waterhouse Nat. Hist. Mamm.*, ii, p. 448, pl. xx, fig. 1; *P. L. Sclater P. Z. S.*, 1871, p. 233; *Danford and Alston P. Z. S.*, 1877, p. 281.

Acanthion cuvieri, *Gray P. Z. S.*, p. 102 (1847).

Ceodcephalus cuvieri, *Gray P. Z. S.*, p. 308 (1866).

The European Porcupine.

Distribution—Southern Europe and Northern Africa, ranging as far as Zanzibar?

a. Stuffed, skeleton	Zanzibar?	Zoological Gardens.
♀		

Hystrix leucurus.

Hystrix leucurus, *Sykes P. Z. S.*, p. 103 (1831); *Elliot Madras Journ.*, x, p. 218; *Gray P. Z. S.*, 1847; p. 100; *Horsfield Cat. E. I. Mus.*, p. 146; *Kelaart Prodr. Faun. Zeylan.*, p. 70; *Adams P. Z. S.*, 1858, p. 520; *Blyth Cat. no.* 421, p. 128; *Gray P. Z. S.*, 1866, p. 308; *Ferdon Mamm.*, p. 218; *McMaster Notes on Ferdon*, p. 55; *P. L. Sclater, P. Z. S.*, 1871, p. 233; *Stoliczka F. A. S. B.*, xli, p. 228; *Murray Zool. Sind*, p. 48; *Thomas P. Z. S.*, 1886, p. 57.

Hystrix cristata, *apud Gray Illustr. Ind. Zool.*, ii, pl. xiv (1834); *Hutton F. A. S. B.*, xv, p. 136; *Blanford Persia*, p. 80.

Hystrix hirsutirostris, *Brandt Mamm. Exot. Nov.*, p. 39, pl. viii, figs. 3-6 (1835); *Waterhouse Nat. Hist. Mamm.*, ii, p. 454, pl. xx, fig. 2; *Wagner Hügel's Kaschmir*, iv, p. 573; *Blyth F. A. S. B.*, xxi, p. 351.

Hystrix zeylonensis, *Blyth F. A. S. B.*, xx, p. 171 (1851).

Hystrix malabarica, *P. L. Sclater P. Z. S.*, p. 353, pl. xvi (1865); *Gray P. Z. S.*, 1866, p. 308.

The Indian Crested Porcupine ; Sahi, Sayal, Sirsel, Hind. ; Saori, Guzerat ; Salendra, Mahrathi ; Yed, Canarese ; Yeddu-pandi, Tamil ; Heetava, Cingalese.

Distribution.—India from Sind and the Himalayas southwards to Ceylon ; Baluchistan ; eastwards not extending to Lower Bengal.

The Baluchistan skull (c.f. Blanford's Persia) seems to agree much better with the Indian skulls than with that of *H. cristata*, of which however there is only one specimen in the Museum, the skull of which exactly agrees with the skull of *H. cristata* as figured in Waterhouse's Mammalia, being distinguished from *H. leucura* by its posteriorly broadened nasals and by its much narrower nasal process of the premaxillae.

<i>a-b.</i> 2 Skins	Jemper, Sind	Karachi Mus. [Ex.]
<i>c.</i> Skin, juv.	" "	Karachi Mus. [Ex.]
<i>d.</i> Skin	Ceylon ?	Zoological Gardens.
<i>e.</i> Stuffed, juv.	"	E. F. Kelaart, A.S.B.

[Type of *Hystrix zeylonensis*, Blyth.]

<i>f.</i> Skin	juv.	.....	A.S.B.
<i>g.</i> Skull		Pind Dadan Khan	W. Theobald, A.S.B.
<i>h.</i> Skull		Ceylon	E. F. Kelaart, A.S.B.
<i>j.</i> Skull		"	E. L. Layard, A.S.B.
<i>k.</i> Skull		Allahabad	J. Cockburn.
<i>l.</i> Skull		No history	A.S.B.
<i>m.</i> Skin, skull ♀		Jalk, Baluchistan,	W. T. Blanford.
		15-3-72.	
<i>n.</i> Skin	♂	Agra dist.	Agra Mus.
<i>o.</i> Skin of head		South India	Sir W. Elliot, A.S.B.
<i>p.</i> Alc.	juv.	.....	W. Rutledge.

Hystrix longicauda.

Hystrix longicauda, *Marsden Hist. Sumatra*, 3rd ed., p. 118, pl. xiii (1810) ; *Raffles Linn Trans.*, xiii, p. 258 ; *Cantor J. A. S. B.*, xv, p. 256 ; *Blyth Cat.* no 423, p. 129 [pt.] ; *Ferdon Mamm.*, p. 221 [pt.] ; *McMaster Notes on Ferdon*, p. 56 ; *P. L. Sclater, P. Z. S.*, 1871, p. 234 ; *Blyth J. A. S. B.*, xlv, *Burma List*, p. 42.

Hystrix fasciculata, *Müller Over de Zoogdieren in Tem. Verhandl.*, p. 36 (1839).

Acanthion hodgsonii, *Gray P. Z. S.*, p. 101 (1847) ; id. *P. Z. S.*, 1866, p. 310.

Hystrix alophus, *Hodgson, J. A. S. B.*, xvi, p. 771, pl. xxxii (1847) ; *Gray Cat. Hodgs. Coll.*, 2nd ed., p. 11.

Hystrix hodgsoni, *Waterhouse Nat. Hist. Mamm.*, p. 461, pl. xx, fig. 3 (1848).

Hystrix bengalensis, *Blyth J. A. S. B.*, xx, p. 170 (1851) ; *Blyth Cat.* no. 422, p. 128 ; *Ferdon Mamm.*, p. 220.

Acanthochærus grotei, *Gray P. Z. S.*, p. 310, pl. xxxi (1866).

The Crestless Porcupine ; Sajru, Bengal ; Anchotia Dumsi, Nepal ; Sathung, Lepch ; Phyo, Tenasserim.

Distribution.—Himalayas from Nepal eastwards, Lower Bengal,

Assam, Burma and the Malay peninsula, extending to the islands of Sumatra and Borneo.

All the skulls in the Museum of the crestless type of Porcupine with one exception are of the type figured by Waterhouse (*l. c.*) distinguished by their long posteriorly rounded and expanded nasal bones, the other type figured by Waterhouse as *H. javanica* is distinguished by its short truncated nasals which do not reach as far back as the level of the lacrymal bone; there is one skull of this type in the Museum—see below under *H. yunnanensis*; there does not seem to be any real difference between the three so-called species *H. longicauda*, *H. bengalensis* and *H. hodgsoni*, unless it is that in the last named there is no trace of a crest, whereas a small crest is present in *H. bengalensis* and *H. longicauda*; the skulls of these species vary enormously and no distinctions can be found which do not break down when a series are examined.

a. Skin, skull	Nepal Valley, 4-78	J. Scully.
b. Skin, skull	Nepal	B. H. Hodgson, A.S.B.
c. Skin, skull	Darjeeling	E. Blyth (1832) A.S.B.
d. Skin, skull	Sikkim	L. Mandelli.
e. Skin, juv	Arakan	L. Mandelli, A.S.B.
f. Stuffed skull	.....	E. Lindstedt, A.S.B.

[Type of *H. bengalensis*, Blyth.]

g. Stuffed, juv.	.....	A.S.B.
h. Stuffed skull,	Malacca	A.S.B.
j. Stuffed skull,	.....	Rajah R. Mullick
		29-12-71
k. Skeleton, mtd.	.....	Rajah R. Mullick, A.S.B.
l. Skeleton ♂	.....	Babu H. M. Roy, A.S.B.
m. Skeleton	.....	No history.
n. Skull	Assam	F. Jenkins, A.S.B.
o-s. 5 Skulls	.....	No history.

Hystrix yunnanensis.

Hystrix yunnanensis, *Anderson Anat. Zool. Res.*, p 332 (1878).

Distribution.—Kakhyen hills of Upper Burma.

The skull of this species, as is pointed out by Anderson, (*l. c.*) resembles very closely that of *H. javanica*, described and figured by Waterhouse (*Mamm.*, ii, p. 465, pl. xx, fig. 4), the great feature of the skull being the short nasals which do not extend back as far as the anterior level of the lacrymal bones and the consequent increase in size of the frontals. Günther (*P. Z. S.*, 1876, p. 737) has described a species of *Hystrix* from Borneo as *H. crassispinus*, the skull of which (woodcut fig. 1), also agrees very closely with the Yunnan skull; the Borneo species, judging from the plate, does not appear to be crested, in this resembling *H. javanica*, but it is distinguished by its very large and thick spines, some of which

are twice as thick as an incisor tooth; the Yunnan species on the other hand, has a small crest and the spines are of a moderate size, at least none are as large as the incisor teeth.

The skull of *H. javanica*, which was figured by Cuvier (Mem. Mus. Paris, ix, pl. ix, figs. 3-4) seems to be of the same type as *H. longicauda* with posteriorly extended and swollen nasals.

a. Skin, skull Kakhyen hills J. Anderson.

[Type of *Hystrix yunnanensis*, Anderson.]

Genus LAGOSTOMUS.

Lagostomus, *Brookes Linn. Trans.*, xvi, p. 102 (1828).

Lagostomus trichodactylus.

Lagostomus trichodactylus, *Brookes Linn. Trans.*, xvi, p. 102, pl. ix (1828); *Waterhouse Nat. Hist. Mamm.*, ii, p. 212.

The Viscacha.

Distribution.—The open plains of the southern part of South America.

a. Skeleton W. Rutledge.

Genus CÆLOGENYS.

Cœlogenus, *F. Cuvier Ann. Mus., Paris*, x, p. 203 (1807).

Cœlogenys, *Illiger Prodr.*, p. 92 (1811).

Cœlogenys paca.

Mus paca, *Linnaeus Syst. Nat.*, 12th ed., i, p. 81 (1866).

Cœlogenus subniger } *F. Cuvier Ann. Mus., Paris*, x, p. 206, pl. ix (1807).

Cœlogenus fulvus

Cœlogenys paca, *Blyth Cat.* no. 420, p. 128 (1863); *Alston Biol. Centr. Amer. Mamm.*, p. 174.

Distribution.—From Vera Cruz in Mexico southwards through Central and South America to Paraguay.

a. Skin	.....	No history.
b. Skin	.....	W. Rutledge.
d. Stuffed	South America.	E. Blyth, A.S.B.
e. Stuffed		Purchased.
f. Skeleton mtd.		E. Blyth, A.S.B.
g-h. 2 Skulls		E. Blyth, A.S.B.

Genus CAVIA.

Cavia, *Pallas Miscell. Zool.*, p. 30 (1766)*.

Cavia porcellus.

Mus porcellus, *Linnaeus Syst. Nat.*, 12th ed., i, p. 79 (1766).

Cavia cobaya, *Gmelin Syst. Nat.*, i, p. 122 (1788); *Blyth Cat.* no. 426, p. 129; *Waterhouse Nat. Hist. Mamm.*, ii, p. 185.

The Guinea Pig.

Distribution.—South America, only known domesticated.

a. Skin	♀	.....	Purchased.
b. Skin, skull	♂	.....	Purchased.
c. Skin	♂	.....	Zoological Gardens.
d. Stuffed		.....	A. D. Bartlett (1849), A.S.B.
e. Skeleton	♀	.....	W. Rutledge.

Cavia australis.

Cavia australis, *Is. Geoff. St. Hil. Mag. de Zool.*, iii, pl. 129*; *Blyth Cat.* no. 425, p. 129.

Kerodon kingii, *Bennett P. Z. S.*, p. 190 (1835).

Distribution.—Patagonia.

a. Stuffed	C. T. Eyton, A.S.B.
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Genus HYDROCHÆRUS.

Hydrochærus, *Erxleben Syst. Regn. Anim.*, p. 191 (1777).

Hydrochærus capybara.

Hydrochærus capybara *Erxleben Syst. Regn. Anim.*, p. 193 (1777).

Distribution.—South America from Guiana to Paraguay.

a. Skeleton mtd.	.....	W. Rutledge.
b. Skull	.....	E. Blyth, A.S.B.

Genus LAGOMYS.

Lagomys, *Cuvier Regne Anim.*, 2nd ed., i, p. 218 (1829).

Key of the Indian Species.

- a. Larger forms generally over 7 inches in length.
- b. Fur sandy rufous; skull very narrow between the orbits.
- c. Ear long about 1 inch; no white nuchal patch; skull with the anterior palatine foramen divided into an anterior and posterior portion by the inwardly projecting palatal plates of the premaxillae. **L. ladacensis**, p. 110.
- c². Ear shorter, only about .75 inch; a large conspicuous white

patch at the back of the neck; the anterior palatine foramen not divided as above.

L. rufescens, p. 111.

δ^2 . Fur grayish; skull not contracted between the orbits, but with a pair of foramina at the narrowest point at the anterior ends of the frontal bones; the anterior palatine foramen not divided. . **L. macrotis**, p. 110.

a^2 . Smaller, generally under 7 inches in length; fur very long, soft, and rufous; skull broad between the orbits; and the anterior palatine foramen not divided. **L. roylei**, p. 112.

Lagomys ladacensis.

Lagomys curzonæ, *apud Stoliczka* *J. A. S. B.*, xxxiv, p. 108 (1865); *Ander-son P. Z. S.*, 1871, p. 562.

Lagomys ladacensis, *Günther Ann. Mag. N. H.* (4), xvi, p. 231 (1875); *Blanford J. A. S. B.*, xlv, p. 110; id. *Yarkand Mammals*, p. 71, pl. vi fig. i, pl. vii, fig. 2, pl. viia, fig. 1.

Distribution.—The higher regions of Eastern Ladak from 15,000 feet to 19,000 feet.

<i>a-d.</i>	4 Skins ♀	Chagra, Ladak, 15-7-70	G. Henderson.
<i>e.</i>	Skin	" " 7-10-70	G. Henderson.
<i>f-g.</i>	2 Skins ♀ and juv.	Luksung, Ladak, 24-6-70	G. Henderson.
<i>h-k.</i>	3 Skins ♂	" " 7-70	G. Henderson.
<i>l.</i>	Skin	Ladak	G. Henderson.
<i>m.</i>	Skin, skull	Chagra, Ladak, 21-9-73	F. Stoliczka.
<i>n-o-p.</i>	3 Skins	Rimdi, Ladak, 17,000 feet, 22-9-73.	F. Stoliczka.
<i>q.</i>	Skin	Kaziljilga, Ladak	F. Stoliczka.
<i>r-s.</i>	2 Skins, 1 skull.	Gogra, Ladak.	F. Stoliczka.
<i>t.</i>	Skin	Ladak ?	F. Stoliczka.
<i>u-v.</i>	2 Skins ♂ ♀	Kizitlagh Karakorum Pass, 17,500 ft. 24-7-83	C. Ellis.
<i>w.</i>	Skin, skull	Karakorum Brangsa, 23-7-83.	C. Ellis.
<i>x.</i>	Skeleton	Rimdi, Ladak 17,000 ft. 22-9-73.	F. Stoliczka.
<i>y.</i>	Stuffed	Ladak	F. Stoliczka (1864), A.S.B.
<i>z.</i>	Alc.	Ladak	G. Henderson.

Lagomys macrotis.

Lagomys macrotis, *Günther Ann. Mag. N. H.* (4), xvi, p. 231 (Sept. 1875); *Blanford Yarkand Mammals*, p. 75; *Scully Ann. Mag. N. H.* (5), viii, p. 100; id. *P. Z. S.*, 1881, p. 207.

Lagomys auritus, *Blanford J. A. S. B.*, xlv, p. 111 (Oct. 1875); id. *J. A. S. B.*, xlv, p. 326; id. *Yarkand Mammals*, p. 74, pl. vi, fig. 2, pl. viia, fig. 2.

Lagomys griseus, *Blanford J. A. S. B.*, xlv, p. 111 (Oct. 1875); id. *Yarkand Mammals*, p. 77, pl. vii, fig. 1, pl. viia, fig. 3.

Distribution.—Ladak more especially the western part; has a somewhat more extended distribution than the last species.

The additional number of specimens received since the publication of Blanford's Yarkand Mammals confirms what Blanford hinted at in that work that *Lagomys macrotis*, *L. auritus* and *L. griseus* are conspecific. There is no distinction to be found between the skulls of these three so-called species, and the colour and degree of harshness of the fur varies considerably in each individual.

a. Skin and skull. Lukong, Pankong Lake, F. Stoliczka.
Ladak, 19-9-73.

[Type of *Lagomys auritus*, Blanford.]

b. Skin and skeleton. Lukong F. Stoliczka.

c-d. 2 Skins, 1 skull S. of Sanju Pass F. Stoliczka.
Kuenlun Mts., 22-10-73.

[Type of *Lagomys griseus*, Blanford.]

e. Skin, skull Duba, Kuenlun Mts. ? F. Stoliczka.
6-6-74.

f. Skin Above Kharbu, Ladak. F. Stoliczka.
14,000 ft., 22-8-73

g. Skin Leh, Ladak, 21-9-73 F. Stoliczka.

h-j. 2 Skins " " 27-9-73 F. Stoliczka.

k. Skin " " 30-9-73 F. Stoliczka.

l. Skin, skull ♀ Kishengunga Valley, J. Biddulph.
Kashmir, 7,500 ft.,
21-5-76.

m. Skin Gilgit dist., 10,000 ft., J. Biddulph.
23-6-76.

n. Skin ♂ Gilgit, 12,000 ft. J. Scully.

o. Skin, skull Dayoor, Gilgit, J. Scully.
7,500 ft.

Lagomys rufescens.

Lagomys rufescens, Gray *Ann. Mag. N. H.*, x, p. 266 (1842); *Hutton and Blyth* *J. A. S. B.*, xv, p. 140; *Waterhouse Nat. Hist. Mamm.*, ii, p. 20; *Horsfield Cat. E. I. Mus.*, p. 149; *Blyth Cat.* no. 440, p. 133; *Blanford Persia*, p. 83 pl. vi, fig. 2; *Scully J. A. S. B.*, lvi, p. 76; *Murray Ann. Mag. N. H.* (5) xiv, p. 100; *Radde Zool. J. B.*, iv, p. 1053.

Distribution.—Persia and Afghanistan extending to Afghanistan-Turkestan and parts of Transcaspia.

a-b. 2 Skins ♂ Kohrud, Persia, W. T. Blanford.
9,000 ft., 7-72.

c-e. 3 Skins ♀ Kohrud, Persia, W. T. Blanford.
9,000 ft., 7-72.

f-h. 3 Skins ♀ Kohrud, Persia, W. T. Blanford.
9,000 ft., 7-72.

j. Skin, skull.	♂	Sika Ram Mt., Kurrum Valley, 11,000 to 12,000 ft.	J. E. T. Aitchison.
k-l. 2 Skins, 1 skull.	♂ ♀	Shadian, Afghan Turkistan, 8-86.	C. E. Yate.
m. Skeleton	♂	Kohrud, Persia.	W. T. Blanford.
n. Stuffed		Kandahar	T. Hutton (.846), A.S.B.
o-p. 2 Alc.	♂	Kohrud, Persia	W. T. Blanford.
q-t. 4 Alc.	♀	" "	W. T. Blanford.
u. Alc.	juv.	" "	W. T. Blanford.
v-w. 2 Skulls		" "	W. T. Blanford.
x. Skull		Kandahar	T. Hutton (1846), A.S.B.

Lagomys roylei.

Lagomys roylei, *Ogilby Royle's Himal. Bot.*, p. lxix, pl. iv (1839); *Is. Geoff., St. Hil. Jacquemont Voyage*, iv, p. 62; *Waterhouse Nat. Hist. Mamm.*, ii, p. 26; *Wagner Hugel's Kaschmir*, iv, p. 575; *Adams P. Z. S.*, 1858, p. 520; *Blyth Cat.* no. 439, p. 133; *Ferdon Mamm.*, p. 226; *Blanford J. A. S. B.*, xli, p. 35; *Lydekker J. A. S. B.*, xlvi, p. 286; *Scully Ann. Mag. N. H.* (5) viii, p. 100.

Lagomys hodgsonii, *Blyth J. A. S. B.*, x, p. 816, figure on p. 844 (1841); *Waterhouse Nat. Hist. Mamm.*, ii, p. 23.

Lagomys nepalensis, *Hodgson J. A. S. B.*, x, p. 854, figure on p. 816 (1841); *id. J. A. S. B.*, xi, p. 289; *Waterhouse Nat. Hist. Mamm.*, ii, p. 24; *Gray Cat. Hodgs. Coll.*, 1st ed., p. 21; *Horsfield Cat. E. I. Mus.*, 148; *Günther Ann. Mag. N. H.* (4) xvi, p. 230.

Distribution.—The Himalayas generally from Kashmir to Sikkim.

Two other species of *Lagomys*, allied to *L. roylei*, have been described, whether they are identical with *L. roylei* cannot be decided without an examination of the types; one is *L. curzoniae* of Hodgson (*J. A. S. B.*, xxvi, p. 207) procured from the Chumbi Valley of Thibet; this is asserted by Günther (*Ann. Mag. N. H.* (4), xvi, p. 230) to be quite distinct from the other Himalayan species, the other is *L. tibetanus* of Milne Edwards from Moupin in Thibet, and this seems to be closely allied to *L. roylei*.

a. Skin, skull	Mataian, Dras valley, Kashmir, 12,000 ft., 15-8-73.	F. Stoliczka.
b. Skin, skull	Deosai plain, Kashmir (Biddulph) 11,000 to 12,000 ft.	J. Scully.
c. Skin	Sango-Pir, above Astor, Kashmir, 15,000 t.	G. M. Giles.
d. Skin, skull	Kashmir	J. E. T. Aitchison.
e. Skin, skull	Nepal (Hodgson)	India Mus., London.
f-l. 6 Stuffed	.....	A.S.B.
m-n. 2 Alc. 1 skull	Native Sikkim	W. T. Blanford.

Genus LEPUS.

Lepus, *Linnaeus, Syst. Nat.*, 12th ed., i, p. 77 (1766).

Caprolagus, *Blyth J. A. S. B.*, xiv, p. 248 (1845). *Type*, *L. hispidus*.

Key of the Indian Species.

a. Ears longer than the head.

b. Fur distinctly curly; tail white.

c. Rump grayish; ears posteriorly brown.

L. hypsibius, p. 113.

*c*². Rump french gray, contrasting strongly with the colour of the back; ear posteriorly white. *L. pallipes*, p. 114.

*b*². Fur straight; tail never wholly white.

d. Tail black above; nape never black.

e. Fur very soft and thick; ear about 4·5 inches; tarsus about 4·75 inches in the dry skin; nasals rounded or truncated posteriorly; posterior wing of postorbital process of the frontal bone free. *L. tibetanus*, p. 114.

*e*². Fur not so soft; ear about 5·5 inches; tarsus 4·25 inches; nasals as in *L. tibetanus*; posterior wing of postorbital process of the frontal bone meeting the squamosal.

L. dayanus, p. 115.

*e*³. Fur coarse; ear about 4 inches; tarsus 4·25 inches; nasals acutely pointed posteriorly and externally; posterior wing of postorbital process free.

L. peguensis, p. 117.

*d*². Tail and nape black. *L. nigricollis*, p. 116.

*d*³. Tail red above. *L. ruficaudatus*, p. 116.

*a*². Ears shorter than the head; fur very coarse.

L. hispidus, p. 117.

Lepus hypsibius.

Lepus oistolus, *apud Adams P. Z. S.*, p. 520 (1858).

Lepus pallipes, *apud Blyth Cat.* no. 433, p. 131 (1863); *Blanford J. A. S. B.*, xliv, p. 109.

Lepus hypsibius, *Blanford J. A. S. B.*, xliv, p. 214 (1875); *id. Yarkand Mammals*, p. 60, pl. iii, fig. i, pl. iva, fig. i.

Distribution.—Northern Ladak.

a. Skin Pamzal, Changchemno F. Stoliczka.
Valley, Ladak, 29-8-73.

b. Skin, skull Kium, N. Ladak F. Stoliczka.

[Co-types of *Lepus hypsibius*, Blanford.]

c. Skin West Thibet? E. Smyth, A. S. B.

Lepus pallipes.

Lepus pallipes, *Hodgson* *J. A. S. B.*, xi, p. 288, pl. ii (1842); *Waterhouse Nat. Hist. Mamm.*, ii, p. 62; *Cunningham Ladak*, p. 203; *Horsfield P. Z. S.*, 1856, p. 401; *Blanford, P. A. S. B.*, 1875, p. 198; id. *Yarkand Mammals*, p. 62; pl. iii, fig. 2.

? *Lepus oiostolus*, *Hodgson* *J. A. S. B.*, ix, p. 1186 (1840); id. *J. A. S. B.*, xi, p. 288.

? *Lepus tibetanus*, *apud Anderson P. Z. S.*, p. 563 (1871); *Blanford J. A. S. B.*, xli, p. 34.

Distribution.—Thibet from the north of Sikkim extending westwards to Eastern Ladak.

a. Skin, skull	Thibet, north of Sikkim	L. Mandelli.
b. Skin	Nepal (Hodgson)	India Mus., London.
c. Skin juv. ♀	Karakash, 1-8-70	G. Henderson.
d. Skin juv. ♂	Gogra hot springs, Ladak,	G. Henderson.
	7-70.	
e-f. 2 Skins juv.	? Ladak	G. Henderson.
g. Skin	? Ladak	F. Stoliczka.
h. Skin ♂	nr. Balakchi, Kuenlun	J. Scully.
	Mts., 26-8-75.	

Lepus tibetanus.

"Hare of Little Thibet," *Vigne Travels in Kashmir*, ii, p. 268.

Lepus tibetanus, *Waterhouse P. Z. S.*, p. 7 (1841); id. *Nat. Hist. Mamm.*, ii, p. 58; *Gunther Ann. Mag. N. H.* (4), xvi, p. 228; *Blanford Yarkand Mammals*, p. 63, pl. iv, fig. 2; *Scully P. Z. S.*, 1881, p. 207; *Thomas Linn. Trans.*, (2) v, p. 61.

Lepus lehmanni, *Severtzoff Ann. Mag. N. H.* (4), xviii, p. 169; *Scully J. A. S. B.*, lvi, p. 76; *Radde Zool. J. B.*, iv, p. 1054.

Lepus biddulphi, *Blanford J. A. S. B.*, xlvi, p. 324 (1877).

Distribution.—Ladak from the Nubra Valley westward through Gilgit and Afghan and Russian-Turkestan and North Persia.

a-b. 2 Skin 2 skulls	Nubra Valley, Ladak,	Dr. Bellew.
	10-73.	
c. Skin, skull ♂	Chaprot, Gilgit, 17-2-80	J. Scully.
d. Skin, skull ♀	Niltar Valley, Gilgit,	J. Scully.
	29-7-79.	
e-f. 2 Skins, ♀	Gakuch, Gilgit, 25-5-79	J. Scully.
	1 skull.	
g. Skin ♀	Gilgit, 30-1-80	J. Scully.
h. Skin juv.	Manugar nullah, Gilgit,	J. Scully.
	9,000 ft., 2-4-79.	
j. Skin, skull	Yassin, Gilgit,	J. Biddulph.
	7,000 ft., 9-76	

[Type of *Lepus biddulphi*, *Blanford*.]

k. Skin	Hindu Kush	C. E. Yate.
l. Skin juv. ♂	Gulran, Afghan-Turkistan.	J. E. T. Aichison.

Lepus pamirensis.

Lepus pamirensis, *Günther Ann. Mag. N. H.* (4), xvi, p. 229 (1875)

Blanford *J. A. S. B.*, xliv, p. 110; id. *Yarkand Mammals*, p. 67, pl. v, fig. 1, pl. va, fig. 1.

Distribution.—The Pamir.

a-b. 2 Skins Lake Sarikul, Pamir F. Stoliczka.

Lepus stoliczkanus.

Lepus stoliczkanus, *Blanford J. A. S. B.*, xliv, p. 110 (1875); id. *Yarkand, Mammals*, pl. v, fig. 2, pl. va, fig. 2.

Distribution.—Mountains north of Kashgar.

There does not seem to be any very great distinction between this species, *L. pamirensis* and *L. tibetanus*, either in the skins or skulls, and when more specimens are procured, it will probably be found that they are all identical with one another.

a-b, 2 Skins Jigda, Altum Artush, F. Stoliczka.
n. of Kashgar, 26-2-74.

[Types of *Lepus stoliczkanus*, Blanford.]

Lepus yarkandensis.

Lepus yarkandensis, *Günther Ann. Mag. N. H.* (4), xvi, p. 229 (1875);
Blanford Z. A. S. B., xlv, p. 109; id. *Yarkand Mammals*, p. 65, pl. iv,
fig. 1, pl. iv α , fig. 2.

Distribution.—The plains of Eastern Turkestan round Yarkand and Kashgar.

a-b. 2 Skins Katti-ilak, Fyzabad, F. Stoliczka.
E. Turkestan, 1-3-74

c. Skin Yangihissar, 2-12-73 F. Stoliczka.

<i>d-e</i> . 2 Skins	Yarkand,	22-4-73	F. Stoliczka.
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f. Skin Beshkant, Yarkand 2-75 J. Scully.

g. Skin juv. Yarkand, 5-6-75 J. Scully.

h. Skin juv. ♂	"	31.5-75	J. Scully.
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j. Skin	juv.	Hassan Borgha, E. Tur- kistan, 2,350 ft., 19-6- 83.	C. Ellis.
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k. Skeleton	Katti-ilak, Fyzabad, E. Turkestan.	F. Stoliczka.
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Lepus dayanus.

? *Lepus* sp., *Hutton* *J. A. S. B.*, xv, p. 141.

Lepus dayanus, *Blanford P. Z. S.*, p. 663 (1874); *Murray Zool. Sind*, p. 50.

Lepus craspedotis, *Blanford Ann. Mag. N. H.* (4), xvi, p. 313 (1875); *id.*
Persia, p. 80, pl. viii; *Murray Zool. Sind*, p. 49.

Lepus joongshaiensis, Murray Zool. Sind, p. 51 (1884).

Distribution..—Throughout Sind and Baluchistan.

There does not seem to be any distinctions of importance between the Sind and Baluchistan hares, and the description of the third species, *L. joongshaiensis*, agrees entirely with the type of *L. craspedotis* and a specimen labelled *L. dayanus* in the Indian Museum.

- a.* Skin, skull ♀ Pishin, Baluchistan, W. T. Blanford.
8-2-72.

[Type of *Lepus craspedotis*, Blanford.]

- b.* Skin, skull Nara Nai w. of Sehwan, W. T. Blanford.
Sind, 11-2-75.

- c.* Head juv. Chaman, S. Afghanistan J. A. Murray.

- d.* Skull juv. " " J. A. Murray.

- e.* Skull Kandahar T. Hutton, A. S. B.

Lepus ruficaudatus.

Lepus ruficaudatus, *Is. Geoff. St. Hil. Dict. Class. H. N.*, ix, p. 381 (1826); id. *Voy. aux Indes Orient.*, Belanger, p. 156; *Ogilby Royle's Himal. Bot.*, p. lxxviii; *Waterhouse Nat. Hist. Mamm.*, ii, p. 74; *Blyth J. A. S. B.*, xi, p. 100; id. *J. A. S. B.*, xxviii, p. 291; id. *Cat. no. 434*, p. 131; *Ferdon Mamm.*, p. 224; *McMaster Notes on Ferdon*, p. 57; *Stoliczka, J. A. S. B.*, xli, p. 228; *Thomas P. Z. S.*, 1886, p. 57.

Lepus orientalis, *Brown Bengal Sporting Mag.* (1836)*.

Lepus macrotus, *Hodgson J. A. S. B.*, ix, p. 1183 (1840); *Gray Cat. Hodg. Coll.*, 1st ed., p. 20; *Wagner Hügel's Kaschmir*, iv, p. 574, with plate; *Adams P. Z. S.*, 1858, p. 520.

Lepus tytleri, *Tytler Ann. Mag. N. H.* (2), xiv, p. 176 (1854); *Blyth, J. A. S. B.*, xxii, p. 415; id. *J. A. S. B.*, xxiv, p. 471.

The Indian Hare; Khargosh, Hind.; Kharra, Central India; Sasru, Lamma, Hind.; Molol, Gonds.

Distribution.—Northern India, from the Punjab to Bengal, extending from the lower ranges of the Himalayas to the Taptee and Godavery Rivers.

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|----------------------------|------|-------------------------|----------------------|
| <i>a.</i> Skin | ♂ | Agra dist. | Agra Mus. |
| <i>b-c.</i> 2 Skins | | Manbhoom | R. C. Beavan (1865). |
| <i>d.</i> Skin | juv. | " | Mus. Coll (1866). |
| <i>e.</i> Skin | | Thankot, Nepal, 9-12-77 | J. Scully. |
| <i>f.</i> Skin | | Naga Hills | A. W. Chennell. |
| <i>g.</i> Skeleton | | [Calcutta bazaar] | Purchased. |
| <i>h.</i> Stuffed | | " " | Purchased, A. S. B. |
| <i>j-k.</i> 2 Stuffed juv. | | " " | Purchased, A. S. B. |
| <i>l.</i> Stuffed juv. | | Alipore, Calcutta | A. Grote, A. S. B. |
| <i>m.</i> Skeleton mtd. | | [Calcutta bazaar.] | Purchased, A. S. B. |

Lepus nigricollis.

Lepus nigricollis, *F. Cuvier, Dict. Sci. Nat.*, xxvi, p. 307 (1823); *Sykes P. Z. S.*, 1831, p. 103; *F. Cuvier, Nat. Hist. Mamm.* (1837)*; *Müller Over de Zoogdieren in Tem. Verhandl.*, p. 37; *Elliot Madras Fourn.*, x, p. 218; *Waterhouse Nat. Hist. Mamm.*, ii, p. 72; *Blyth J. A. S. B.*, xx, p. 172;

Horsfield Cat. E. I. Mus., p. 147; *Kelaart Prodr. Faun. Zeylan.*, p. 72; *Adams P. Z. S.*, 1858, p. 520; *Zebebor Säugeth. Novara Reise*, p. 31; *Blyth Cat.* no. 437, p. 132; *Ferdon Mamm.*, p. 225; *McMaster Notes on Ferdon*, pp. 57, 66.
Lepus melanauchen, *Temminck and Schlegel Faun. Jap. Mamm. Discour. Prelim.*, p. xiii (1835)*.

The Black-naped Hare; Malla, Canarese; Sassa, Mahr.; Musal, Tamil; Kundeli, Tel.; Hava, Cingalese.

Distribution.—Southern India; from the Taptee and Godavery rivers southwards; Ceylon, Sumatra, Java, and Mauritius where perhaps introduced by human agency.

a. Skin	Bangalore	Mus Coll., Jaffa.
b. Skin	♂ Tenmalai, S. Arcot dist.	Mus Coll., Jaffa.
c. Skin	South India	Madras Mus. (1863).
d. Skin	Ceylon	Columbo Mus.
e. Skin	Ceylon	R. Templeton (1849), A.S.B.
f-g. 2 Skins, 1 skull	...	No history.
h. Stuffed	Java	Batavian Soc. (1844), A.S.B.
j. Stuffed	Mauritius	Batavian Soc. (1844), A.S.B.

Lepus peguensis.

Lepus peguensis, *Blyth J. A. S. B.*, xxiv, p. 471 (1855); id. *Cat.* no. 435, p. 132; id. *J. A. S. B.*, xlv, *Burma List*, p. 43.

Distribution.—The open country of Upper Pegu in Burma.

a. Skin, skull	Upper Pegu	Sir A. Phayre, A. S. B.
[Type of <i>Lepus peguensis</i> , Blyth.]		

Lepus sinensis.

Lepus sinensis, *Gray Illustr. Ind. Zool.*, ii, pl. xx (1834); *Waterhouse Nat. Hist. Mamm.*, ii, p. 80; *Blyth J. A. S. B.*, xxx, p. 90; id. *Cat.* no. 436, p. 132; *Swinhoe P. Z. S.*, 1862, p. 359; id. *P. Z. S.*, 1870, p. 639.

Distribution.—China, from Peking to Canton and the Island of Formosa.

a-b. 2 Stuffed, 1 skull.	Amoy, China	R. Swinhoe (1861), A. S. B.
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Lepus hispidus.

Lepus hispidus, *Pearson Bengal Sporting Mag.*, p. 131 (1843)*; *McClelland P. Z. S.*, 1839, p. 152; *Hodgson J. A. S. B.*, xvi, p. 572, pl. xiv; *Waterhouse Nat. Hist. Mamm.*, ii, p. 78; *Gray Cat. Hodgs. Coll.*, 2nd ed., p. 11; *Blyth Cat.* no. 438, p. 133; *Ferdon Mamm.*, p. 226.
Caprolagus hispidus, *Blyth J. A. S. B.*, xiv, p. 247, with two plates (1845); *Horsfield Cat. E. I. Mus.*, p. 148; *Tytler Ann. Mag. N. H.* (2), xiv, p. 175.

Distribution.—The Terai at the base of the Himalayas from Nepal to Assam, extending southwards to Dacca; said to be found in the Rajmahal hills.

A closely allied species (*Lepus netcheri*) has recently been described by Schlegel (Notes Leyd. Mus., ii., p. 59) from Sumatra.

<i>a-c.</i> 3 Skins	Dacca	F. B. Simson (1870).
<i>d.</i> Head and skull.	"	F. B. Simson (1870).
<i>e.</i> Skin	"	F. Buckland.
<i>f.</i> Stuffed and skull.	Assam.	F. Jenkins, A. S. B.
<i>g.</i> Skeleton	Rajmahal?	W. S. Sherwill, A. S. B.

Lepus europæus.

Lepus europæus, *Pallas Nov. Sp. Quad. e Glir.*, p. 30 (1778).

Lepus timidus, *apud Desmarest Mamm.*, ii, p. 347 (1820); *Waterhouse Nat. Hist. Mamm.*, ii, p. 39; *Blasius Säugeth. Deutsch.*, p. 412; *Blyth Cat.* no. 430, p. 130.

The Hare.

Distribution.—Europe generally, except the more northern parts.

<i>a.</i> Stuffed	England	A. D. Bartlett, A. S. B.
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Lepus cuniculus.

Lepus cuniculus, *Linnaeus Syst. Nat.*, 12th ed., i., p. 77 (1766); *Waterhouse Nat. Hist. Mamm.*, ii, p. 64; *Blyth Cat.* no. 432, p. 131.

The Rabbit.

Distribution.—Southern and Western Europe and North Africa; has been introduced into many places, such as the Falkland Islands, Australia and New Zealand.

<i>a-b.</i> 2 Stuffed	England	A. D. Bartlett, A.S.B.
<i>c.</i> Stuffed	[Lop-eared var.]	Rajah R. Mullick, A.S.B.
<i>d-g.</i> 4 Skulls	.....	A. D. Bartlett, A.S.B.

Lepus timidus.

Lepus timidus, *Linnaeus Syst. Nat.*, 12th ed., i, p. 77 (1766); *Allen Monographs N. Amer. Rodents*, p. 288.

Lepus variabilis, *Pallas Nov. Sp. Quad. e Glir.*, pp. 1, 30 (1778); *Waterhouse Nat. Hist. Mamm.*, ii, p. 51; *Blasius Säugeth. Deutsch.*, p. 420; *Blyth Cat.* no. 341, p. 131.

Lepus arcticus, *Leach in Ross' Voyage*, 2nd ed., *append.*, p. 151 (1819)*.

Lepus glacialis, *Leach in Ross' Voyage*, 2nd ed., *append.*, p. 170 (1819)*.

Lepus albus, *Fenyns Brit. Vert. Anim.*, p. 35 (1835).

Lepus hibernicus, *Bell Brit. Quad.*, 1st ed., p. 341 (1837)*.

Lepus borealis

Lepus canescens } *Nilsson Kongl. Vetens. Akad. Oefvers*, p. 133 (1847)*.

The Polar Hare.

Distribution.—The northern regions of both hemispheres, Scotland and Ireland, and the Alps and elevated regions of Central Europe.

a. Skin (summer).	Norway	Christiania Univ., A.S.B.
b. Skin (winter).	Scotland	Sir W. Jardine, A.S.B.
c. Stuffed (winter).	Norway	Christiania Univ., A.S.B.
d. Stuffed (winter).	Scotland	Sir W. Jardine, A.S.B.
e. Stuffed (summer) and skull.	Ireland	A. D. Bartlett, A.S.B.
f. Stuffed (winter).	No history	A.S.B.
g-j. 3 Skulls	.....	A. D. Bartlett.

Lepus ægyptius.

Lepus ægyptius, *Is. Geoff. St. Hil. Descrip. Egypt. Hist. Nat.*, ii, p. 739, *Atlas*, pl. vi, fig. 2 (1812); *Waterhouse Nat. Hist. Mamm.*, ii, p. 85; *Blanford Abyssinia*, p. 273.

Lepus ægyptiacus, *Hempr & Ehr. Symb. Phys.*, pl. xv, fig. i (1828).

Lepus habessinicus, *Brehm Habesch.*, p. 64 (1863)*.

Distribution.—North-East Africa.

a. Skin	♂ Koomeylee, Abyssinia,	W. T. Blanford.
	400 ft., 2-6-68.	
b. Skin	♀ Zoulla, Annersley Bay,	W. T. Blanford.
	Abyssinia, 6-2-68.	

Lepus tigrensis.

Lepus tigrensis, *Blanford Ann. Mag. N. H.* (4), iv, p. 330 (1869); *id. Abyssinia*, p. 275.

Lepus abyssinicus, *apud Lefebvre Voyage Abyssinie*, vi, *Atlas*, pl. v, fig. i.*

Distribution.—Hill country of Abyssinia.

a-b. 2 Skins	Takonda, Abyssinia,	W. T. Blanford.
	7,500 ft., 27-1-68.	
c. Skin	nr. Tigré, Abyssinia,	W. T. Blanford.
	7,500 ft., 1-3-68.	

Lepus capensis.

Lepus capensis, *Linnaeus Syst. Nat.*, 12th ed., i, p. 76 (1766); *Waterhouse Nat. Hist. Mamm.*, ii, p. 95; *Blyth Cat. no.* 429, p. 130.

Lepus ochropus, *Wagner, Schreber's Säugeth. Suppl.*, iv, p. 96 (1844).

Distribution.—South Africa.

a. Stuffed	South Africa	E. L. Layard, A.S.B.
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Lepus saxatilis.

Lepus saxatilis, *F. Cuvier Dict. Sci. Nat.*, xxvi, p. 309 (1823); *Waterhouse Nat. Hist. Mamm.*, ii, p. 92; *Blyth Cat.* no. 428, p. 130.

Lepus rufinucha, *A. Smith, Zool. Journ.*, iv, p. 440 (1829).

Lepus longicaudatus, *Gray Charlesw. Mag. N. H.*, i, p. 586 (1837).

Lepus fumigatus, *Wagner Schreber Säugeth. Suppl.*, iv, p. 98 (1844).

Distribution.—South Africa.

a. Stuffed South Africa E. L. Layard, A.S.B.

Lepus americanus.

Lepus americanus, *Erxleben Syst. Reg. Anim.*, p. 330 (1777); *Allen Monographs N. Amer. Rodents*, p. 304.

Lepus hudsonius, *Pallas Nov. Sp. Quad. e Glir.*, p. 30 (1778).

Lepus virginianus, *Harlan Faun. Amer.*, p. 196 (1825)*.

Lepus borealis, *Schinz Synop. Mamm.*, ii, p. 286 (1845).

Lepus washingtoni, *Baird P. Acad. Nat. Sci. Philad.*, vii, p. 333, pl. xv, (1856).

Lepus bairdi, *Hayden Amer. Nat.*, iii, p. 115 (1869)*.

The Varying Hare.

Distribution.—The wooded portion of the northern half of North America.

a. Skin (winter).	Lucknow Ont., Canada	J. H. Garnier [Ex.]
	25-12-84.	
b. Skin (winter).	Gatineau R. Queb.,	J. H. Garnier [Ex.]
	Canada.	
c. Skull	Massachusetts, U.S.A.	W. Theobald.

Lepus sylvaticus.

Lepus nanus, *Schreber Säugeth*, iv, p. 881 (1792) [in part.]

Lepus americanus, *apud Desmarest Mamm.*, ii, p. 351 (1822).

Lepus sylvaticus, *Bachman F. Acad. Nat. Sci. Philad.*, vii, p. 403 (1837); *Allen Monographs North Amer. Rodents*, p. 328.

Lepus nuttalli, *Bachman F. Acad. Nat. Sci. Philad.*, vii, p. 345, pl. xxii (1837).

Lepus bachmani, *Waterhouse P. Z. S.*, p. 103 (1838).

Lepus artemesia, *Bachman F. Acad. Nat. Sci. Philad.*, viii, p. 94 (1839).

Lepus auduboni, *Baird N. Amer. Mamm.*, p. 608, pl. xiii (1857)*.

Wood Hare or Wood Rabbit.

Distribution.—The greater part of the southern half of North America.

a. Skin	Nuces, Texas, 3-84	J. H. Garnier [Ex.]
b. Skin	Texas	J. H. Garnier [Ex.]
c. Skull	Massachusetts	W. Theobald.

Lepus callotis.

Lepus callotis, *Wagler Nat. Syst. Amphib.*, p. 23 (1830); *Allen Monographs N. Amer. Rodents*, p. 350.

Lepus nigricaudatus, *Bennett P. Z. S.*, p. 41 (1833).

Lepus texianus, *Waterhouse Nat. Hist. Mamm.*, ii, p. 136 (1848).

The Jackass Hare.

Distribution.—Southern parts of the United States and Mexico to the isthmus of Tehuantepec.

a. Skin Nuces Valley, Texas, 2-84 J. H. Garnier [Ex.]

Order UNGULATA.

Placental Mammals with no clavicles ; with limbs for progression only ; the 1st digits of all recent forms wanting ; ungual phalanges hoofed ; metacarpals and metatarsals vertically elongated or sharply inclined ; teeth covered with enamel and molars generally complex.

Key of the Indian Genera.

a. Digits of manus and pes equal or even in number ; the 3rd digit of each foot asymmetrical in itself, but forms with the 4th digit a symmetrical pair ; no 3rd trochanter to the femur, posterior premolars smaller and simpler than the molars ; stomach complex ; caecum small ; horns when present paired.
[=Artiodactyla.]

b. Ulna and fibula incomplete, confluent with radius and tibia, manus and pes functionally didactyle ; incisors rarely present in the upper jaw ; lower canines incisiform ; premolars and molars with uni- or bicrescentic ridges ; stomach complex, four-chambered and ruminating.
[=Selenodontia.]

c. Horns generally present ; the third and fourth metacarpals and tarsals fused to form a cannon bone ; digits two and five, incomplete and wanting. [=Cotylophora.]

d. Horns hollow and persistent ; digits two and five represented by hoofs only ; no upper canines ; gall bladder present. [=Bovidæ, see key below.]

d². Horns solid and deciduous ; digits two and five have distinct metacarpals and phalanges ; no gall bladder.
[=Cervidæ.]

e. Horns small ; upper canines well-developed ; distal tarsal elements all united except an ectocuneiform.

Cervulus, p. 172.

*e*². Horns generally large; the navicular and cuboid elements of the tarsus usually distinct; canines only moderately developed. . . . **Cervus**, p. 174.

*e*³. Horns absent; canines very large.

Moschus, p. 171.

*c*². Horns absent; 3rd and 4th metacarpals unite late or not at all; 2nd and 5th digits complete on each foot; canines present in both jaws; placenta diffuse.

Tragulus, p. 188.

*b*². Non-ruminant hornless forms with tarsals and carpals, ulna and fibula distinct and complete; manus and pes tetradactyle; incisors present in upper jaw, molars with tuberculate or transversely ridged crowns; canines present in both jaws; stomach simple; placentation diffuse.

[=Bunodontia.]

Sus, p. 192.

*a*². Digits of the pes odd in number; median or 3rd digit symmetrical bilaterally; femur with a 3rd trochanter; tympanic bone small and solid; stomach simple, cæcum long; no gall bladder; placentation diffuse; horns when present unpaired.

[=Perissodactyla.]

e. Forms with soft hairy skin; nose proboscideiform; radius and ulna, tibia and fibula complete, the two latter distinct; manus with four, pes with three digits.

Tapirus, p. 198.

*e*². Forms with thick skin and scanty hair; radius and ulna, tibia and fibula complete; manus and pes tri-dactyle; orbits incomplete; canines absent; one or two coreless epidermic mesial horns on the snout formed of fused hair. . . . **Rhinoceros**, p. 201.

*e*³. Specialized forms; ulna and fibula incomplete distally, confluent proximally with the radius and tibia; 3rd digit on each foot functional only, the 2nd and 4th rudimentary and represented by splint bones; orbits complete. . . . **Equus**, p. 198.

Key of the Genera of Indian Bovidae.

a. Horns always present in both sexes, and set wide apart; occipital and frontal planes form an acute angle; muffle large; no antorbital pits; four mammae; large and massive animals.

Bos, p. 123.

- a*². Horns present in both sexes, but often markedly smaller in the females, set with their bases close to one another; the occipital and frontal planes form an acute angle.
- b*. Horns wrinkled and forming circles; no muffle; small feet pits on all four feet; antorbital pits present (except *O. nahoor*); basioccipital oblong with the posterior tubercles larger (except *O. nahoor*); four mammæ. **Ovis**, p. 131.
- b*². Horns smooth and angular; no muffle; no antorbital pits; feet-pits if present, only on the fore-feet; basioccipital wider in front, and the anterior tubercles larger; two mammæ (except *C. jemlaica*). . . . **Capra**, p. 142.
- b*³. Horns rounded and small; a small muffle present; antorbital pits present; feet-pits large; four mammæ.
Nemorhædus, p. 147.
- a*³. Horns not always present in the females, placed on the crest of the frontals but generally some way apart at their bases; the frontal and occipital planes hardly form an angle but a rounded surface; generally four mammæ; antorbital pits always present.
- c*. Horns smooth, in males only; muffle present; mammæ four in number.
- d*. Of large size; horns short recurved; a short erect mane, and a throat tuft in the male. . **Boselaphus**, p. 154.
- d*². Of small size; horns four in number; canines present in the males. . . . **Tetracerus**, p. 168.
- c*². Horns ringed; no muffle; mammæ two in number.
- e*. Horns straight, long, annulated, in males only; no muffle; no canines. . . . **Antilope**, p. 162.
- e*². Horns ringed, generally lyrate; if present in female, small.
- f*. An intermaxillary pouch present; no horns in females; no knee tufts. . **Pantholops**, p. 163.
- f*². No intermaxillary pouch; females often horned; knee tufts generally present. **Gazella**, p. 157.
- c*³. Horns gnu-like, spining close together; muzzle bovine, no antorbital pits or feet-pits. . **Budorcas**, p. 151.

Genus **BOS**.

Bos *Linnaeus Syst. Nat.*, 12th ed., i, p. 98 (1766).

Bison, *H. Smith Griffith An. Kingd.*, v, p. 373 (1827).

Bubalus, *H. Smith Griffith An. Kingd.*, v, p. 371 (1827).
 Anoa, *H. Smith Griffith An. Kingd.*, v, p. 355 (1827).
 Bibos, *Hodgson F. A. S. B.*, vi, p. 499 (1837). Type, *B. gaurus*.
 Poephagus, *Gray List Mamm. B. M.*, p. 153 (1843). Type, *B. grunniens*.
 Gavæus, *Hodgson F. A. S. B.*, xvi, p. 706 (1847). Type, *B. frontalis*.
 Zebus, *Blyth F. A. S. B.*, xxix, p. 283 (1860). Type, *B. indicus*.

Key of the Indian Species.

- a. With smooth flattened horns never exceeding 3 feet in length ; legs white ; hair always short ; frontal bones concave.
 - b. White of hind legs extends to rump, forming an anal patch ; tail long ; premaxillary bones reach and touch the nasals ; dorsal ridge not marked. **B. sondaicus**, p. 127.
 - b². White colour confined to the legs, premaxillary bones do not reach the nasals ; dorsal ridge marked.
 - c. No dewlap ; tail long ; skull elongated. **B. gaurus**, p. 124.
 - c². Dewlap present ; tail short ; skull markedly triangular. **B. frontalis**, p. 126.
- a². Horns cylindrical ; nose hairy ; no dewlap, hump or dorsal ridge ; body clothed in parts with very long hair ; frontals convex. **B. grunniens**, p. 128.
- a³. Horns very large and flattened, generally exceeding 3 feet in length ; body very sparsely covered with hair ; hoofs very large ; thirteen pairs of ribs. **B. bubalus**, p. 129.

Bos gaurus.

"Gaour," *Geoffroy St. Hil. Mem. Mus. Paris.*, ix, p. 71 (1822).
 Bos—sp. "Gour of India" *Traill Edin. Philos. Journ.*, xi, p. 334 (1824).
 Bos gaurus, *H. Smith Griffith An. Kingd.*, iv, p. 399 (1827) ; *Evans F. A. S. B.*, vi, p. 223 ; *Pearson* *ibid.*, p. 225 ; *Blyth F. A. S. B.*, xi, p. 444 ; *Cantor, F. A. S. B.*, xv, p. 272 ; *Blyth F. A. S. B.*, xxxi, p. 336 ; *Blanford F. A. S. B.*, xxxvi, p. 192 ; *Blyth F. A. S. B.*, xlv, *Burma List*, p. 47 ; *McMaster Notes on Ferdon*, p. 128 ; *Pollok Sport in Brit. Burma*, i, p. 99 ; *Nevill Taprobanian*, iii, p. 5 ; *Inverarity F. Bomb. Soc.*, iv, p. 294.
 Bos gour and gayæus, *Hardwicke Zool. Journ.*, iii, p. 233 (1828).
 Bibos subhemachalus, *Hodgson F. A. S. B.*, vi, p. 499 (1837).
 Bibos cavifrons, *Hodgson F. A. S. B.*, vi, p. 745 (1837) ; *Elliot Madr. Journ.*, x, p. 227, pls. v, vi ; *Hodgson F. A. S. B.*, x, pp. 449, 912 ; *Horsfield Cat. E. I. Mus.*, p. 181.
 Bibos gaurus, *Gray Cat. Hodgs. Coll.*, 1st ed., p. 24 (1846) ; *id. Cat. Mamm. B. M.*, iii, p. 32 ; *P. L. Sclater, P. Z. S.*, 1889, p. 447.

Bibos asseel, *Horsfield Cat. E. I. Mus.*, p. 181 (1851).
 Bibos frontalis, *apud Thompson, P. Z. S.*, p. 96 (1852).
 Gavæus gaurus, *Blyth J. A. S. B.*, xxix, p. 282 (1860); *Blyth Cat.*, p. 161;
Jerdon Mamm., p. 301; *Maingay P. A. S. B.*, 1868, p. 194; *Sterndale*
Mamm. Ind., p. 481.

The Bison or Gaur; Gaur or Gourigai, Hind.; Gaviya, Mahrathi;
 Jungli Khoolda, Deccan; Kar-kona, Canarese; Bod at Seone;
 Banparra at Mundlah; Vanago, Bengali; Katuyeni, Tamil; Ran-
 pado, Guzerati; Ran Hila, Bheels; Pyoung, Burma.

Distribution.—The peninsula of India in forest tracts, from the
 Vindhyan Hills along the north of the Nerbudda (Jerdon); south-
 ward through Kandeish and the Western Ghats to Tinnevely
 (Elliot); eastward through the Central Provinces and Chota Nag-
 pore almost to Midnapore (Jerdon); the Nepal terai (Hodgson);
 Assam; Tipperah and Chittagong Hills; southwards through
 Burma (Blyth) to Malay peninsula (Cantor and Maingay) but not
 recorded from any of the Islands.

It doubtless formerly occurred in Ceylon, since the Guavera of
 Knox's description of Ceylon is doubtless the Gaur, and Major
 Forbes (Journal of Eleven Years' residence in Ceylon, ii, p. 159)
 asserts that it was only at the beginning of the present century
 that it was exterminated.

a. Skull, horns	.....	W. T. Blanford (1868).
b. Skull, horns ♀ Assam		F. Jenkins (1844), A.S.B.
c. Skull, horns	.....	No history.
d. Skull, horns Gauhati, Assam		F. T. Pollok (1870).
e. Skull, horns ♂ Chybasa.		S. R. Tickell (1840), A.S.B.
f. Skull, horns Malacca		Dr. Maingay, (1863).
g. Skull, horns Gauhati, Assam		F. T. Pollock (1870).
h. Skull, horns ♂ Burma		Sir A. Phayre, A.S.B.
j. Skull, horns ♂	.....	C. S. Guthrie (1862), A.S.B.
k. Skull, horns ♀ Tipperah hills		Rev. J. Barbe, (1846) A.S.B.
l. Frontlet ♂ Chittagong hill tracts		J. T. Jarbo (1879).
m. Skull, horns Chittagong dist.		J. A. Campbell (1879).
n. Frontlet ♂ Chittagong hill tracts		J. T. Jarbo (1879).
o. Skull, horns Chittagong hill tracts		J. T. Jarbo (1879).
p. Skeleton, juv.	.....	Zoological Gardens (1883).
skin. ♂		
q. Skeleton, juv.	.....	Zoological Gardens (1883).
skin. ♀		
r. Stuffed ♀ Chanda		W. T. Blanford (1867).
s. Stuffed ♂ Chota Nagpore		A. A. Kinloch (1883). A.S.B.
t. Skeleton ♂	.....
u. Skeleton ♀ Chota Nagpore		Major Ousley (1840).
skin, horns	.....	Purchased, 1847, A.S.B.
w. Skull and ♀ Bhutan Dooars		A. A. Kinloch, 1882.
skin of head.		
x. Skull and Chittagong hill tracts		J. T. Jarbo, 1881.
horns.		
y. Pr. of horns ♂	.....	No history, A.S.B.

Bos frontalis.

- Bos frontalis*, *Lambert Linn. Trans.*, vii, pp. 57 and 302, pl. iv (1804); *Gray Cat. Hodgs. Coll.*, 1st ed., p. 24; *P. L. Sclater P. Z. S.*, 1866, p. 1, pl. i; *Blanford F. A. S. B.*, xxxvi, p. 192; *Blyth F. A. S. B.*, xliv, *Burma List*, p. 48; *Pollok Sport in Brit. Burma*, i, p. 104; *Farbo P. Z. S.*, 1883, p. 143; *Sterndale Mamm. Ind.*, p. 486.
- Bos gavæus*, *Colebrooke As. Res.*, viii, p. 487, with plate (1805); *Hodgson F. A. S. B.*, x, p. 453.
- Bibos frontalis*, *Gray List Mamm. B. M.*, p. 151 (1842); *id Cat. Mamm. B. M.*, iii, p. 31.
- Bos sylhetanus*, *F. Cuvier Hist. Nat. Mamm.*, livr. 41, 42, with plate (1824); [hybrid with *B. taurus*].
- Gavæus frontalis*, *Hodgson F. A. S. B.*, xvi, p. 706 (1847); [*Blyth Cat.*, p. 162; *Horsfield Cat. E. I. Mus.*, p. 179; *Blyth F. A. S. B.*, xxix, p. 294; *id. ibid*, xxxi, p. 338.

The Gayal; Gavaye, Hind.; Gayal, Beng.; Shio of the Mughs of Chittagong; Mithana or Mithun of the Kookies; Johnguna, Burma.

Distribution.—From Akyab northwards through the Arakan and Chittagong hills, extending through Tipperah and Munipur to the Naga hills; also found in the Duffla hills north of the Brahmapootra.

The Gayal is distinguished from the Gaur (*B. gaurus*) by its heavier and more clumsy build, by the possession of a well-developed dewlap and shorter tail; the horns of the Gayal are horizontal and very nearly straight; they are quite black, contrasting with the greenish horns of the Gaur; the skull too of the Gayal contrasts strongly with that of the Gaur by its very much more triangular shape; the concavity of the frontal bones, which is so marked a feature in the Gaur's skull, exists also in the Gayal though not nearly in so marked a way; in the median line of the skull between the horns there is in the Gaur a distinct ridge which is quite unrepresented in the Gayal.

The Banteng (*Bos sondaicus*) is at once distinguished from the Gayal and the Gaur by the extension of the white of the hind legs up to the rump; it has a moderate dewlap and a long tail, and the dorsal ridge so conspicuous a feature of the Gaur and Gayal is much less developed in the Banteng.

The Gayal is always found in a semi-domestic state belonging to different villages of the numerous hill tribes on the Assam frontier, such as the Nagas and Kookies; they roam about the forest all day but always return to the hill tribes' villages at night, and there is considerable doubt as to whether the Gayal ever occurs in a true feral state.

The older writers seem to have had no doubt on the subject. Colebrooke (see above) says it is found wild in the Chittagong, Tipperah and Sylhet hills, and he also mentions that the animal is brown and has a well-developed dewlap, thus showing that he was not confusing the Gayal with the Gaur which also occurs in the

same country, and one of whose distinguishing features is the absence of a dewlap; Blyth in his earlier writings also seems to have believed in the wild Gayal; later, however, (Mammals of Burma) he seems to have come to the conclusion that the Gayal was a purely domestic race, in which view he is supported by Jarbo and Anderson.

<i>a.</i>	Skull, horns	.....	No history.
<i>b.</i>	Skull, horns	.....	No history.
<i>c.</i>	Skull, juv. ♂ horns.	.....	E. Blyth, 1857, A.S.B.
<i>d.</i>	Skull, horns ♂	.....	W. Hodge, 1870.
<i>e.</i>	Skull, horns ♂	.....	R. W. G. Frith, 1850, A.S.B.
<i>f.</i>	Skull, horns. juv. (hybrid)	.....	R. W. G. Frith, 1851, A.S.B.
<i>g.</i>	Skeleton, ♀ skin.	.....	Zoological Gardens, 1880.
<i>h.</i>	juv. Skeleton ♀ Chittagong (hybrid)	.....	Zoological Gardens, 1878.
<i>j.</i>	Stuffed juv.	.....	W. Rutledge.
<i>k.</i>	Skull, horns (dom. var.)	.....	E. Blyth, 1857, A.S.B.
<i>l.</i>	Skin, skull ♀	.....	Zoological Gardens, 1889.
<i>m.</i>	Skin, skull	.....	No history, A.S.B.

Bos sondaicus.

"Banteng" *Raffles Hist. of Java*, i., p. 111 (1817).

Bos leucoprymnus, *Quoy et Gaimard Astrolabe Zoologie*, i., p. 140 (1830)
[hybrid with *B. taurus*].

Bos sondaicus, *Schlegel and Müller Tem. Verhandl.*, p. 195, pls. xxxv to xxxix (1840); *Blyth J. A. S. B.*, xi, p. 445; *Blyth J. A. S. B.*, xxxi, p. 336; *Blyth J. A. S. B.*, xlv, *Burma List*, p. 48; *Pollok Sport in Brit. Burma*, i, p. 105.

Bibos banteng, *Gray Knowsley Menagerie*, p. 48 (1850)*; *Horsfield Cat. E. I. Mus.*, p. 183; *Gray Cat. Mamm. B. M.*, iii, p. 35.

Gavæus sondaicus, *Blyth, J. A. S. B.*, xxix, p. 296 (1860); *id. Cat.*, p. 160; *McMaster Notes on Ferdon*, p. 131; *Sterndale Mamm. Ind.*, p. 488.

The Banteng; Tsoing, Burmese.

Distribution.—From Arrakan (Blyth) southwards though Burma (Pollok) to the Malay peninsula, and in the Islands of Java, Bali (Raffles) and Borneo (Müller).

The horns of the Banteng are more rounded in section than those of the Gaur and Gayal, and their circumference is much less in proportion to their length as will be seen by the table of measurements below; the colour of the horns are greenish with black tips. The skull is long, resembling that of the Gaur in general shape rather than that of the Gayal; the forehead is much flatter than that of the Gayal and Gaur, and the premaxillary bones reach and touch the nasals, while in the Gaur and Gayal there is a gap of about an inch between these two bones.

Measurements in inches of Skulls and Horns of adult Gaur, Gayal and Banteng.

	Gaur.	Gayal.	Banteng.
Across the forehead from the bases of the horns .	9	11	11½
From frontoparietal ridge to tip of nasals .	19	15	14½
Across from orbit to orbit .	11	9½	8½
Horns, circumference at base	17	16½	11½
Horns, outside curve .	31	16	20
„ inside curve .	22	15	16
a. Skull and horns.	Java ?	Prince Henry of the Netherlands, 1837, A.S.B.	
b. Skull and horns.	Java	Batavian Soc., 1844, A.S.B.	
c. Skull and horns.	Upper Pegu	Sir A. Phayre, 1849, A.S.B.	
d. Skull and horns.	Upper Pegu	Sir A. Phayre, 1849, A.S.B.	
e. Skull and ♂ horns. juv.	.....	Zoological Gardens, 1885, A.S.B.	
f. Skin, skeleton. juv.	.....	W. Rutledge, 1881.	
g. Skin, skeleton. ♂	.....	Zoological Gardens, 1885.	
h. Skull and ♂ horns.	.....	Sir A. Phayre, A.S.B.	
j. Skin, skeleton. ♀	Pegu	W. Rutledge, 1881.	
k. Skin, skeleton. juv.	.....	W. Rutledge, 1881.	

Bos grunniens.

Bos grunniens, *Linnaeus Syst. Nat.*, 12th ed., p. 99 (1766); *Radde Ost Siberien*, p. 272; *Severtzoff Ann. Mag. N. H.* (4), xviii, p. 336; *Kinloch Large Game Shooting*, ii, p. 5, with plate.
Bos poephagus, *H. Smith in Griffith An. Kingd.*, iv, p. 404 (1827); *Pallas Zoog. Ross. As.*, p. 248, pl. xxii; *Hutton and Blyth J. A. S. B.*, xv, p. 143.
Bison poephagus, *Hodgson J. A. S. B.*, x, pp. 449, 912 (1841); *Gray. Cat. Hodgs. Coll.*, 1st ed., p. 25; *Hodgson J. A. S. B.*, xvi, p. 708.
Poephagus grunniens, *Gray List Mamm. B. M.*, p. 153 (1843); *Blyth Cat.*, p. 158; *Horsfield Cat. E. I. Mus.*, p. 184; *Gray P. Z. S.*, 1853, pl. xxxv, p. 191; *id. Cat. Mamm. B. M.*, iii, p. 40; *Adams P. Z. S.*, 1858, p. 529; *Sterndale Mamm. Ind.*, p. 489.

The Yak; Donkh, Tibetan; Bunchowr, Hind.

Distribution.—The Mountains of Central Asia, seldom descending much below 6,000 ft. Hodgson describes it as being found from the Altai to the Himalayas.

The domestic variety is found in Transbaikalia (Radde), Turkestan (Severtzoff), and all through Mongolia and Thibet whence it is used for bringing marchandize across the high passes of the Himalayas to India.

The wild variety is recorded by Horsfield as having been shot by Captain (now General) Strachey in Ladak. Adams also gives an account of shooting wild yaks on the southern slopes of the Karakorum Mountains, *i.e.*, in Ladak; Kinloch gives the valley of the Chang Chenmo as the most likely locality for a sportsman to kill yak; Przewalsky records wild yaks on the northern part of the Thibetan plateau and they probably occur all over the higher parts of Thibet.

a. Skull and horns	.....	No history, A.S.B.
b. Skull and horns	Sikkim	W. Rutledge, 1870.
c. Skeleton ♀ (dom. var.)	... ..	Rajah R. Mullick.
d. Skeleton ♀ (dom. var.)	.....	Rajah R. Mullick.
e. Stuffed ♂ (wild var.)	.....	E. Smyth, 1862, A.S.B.
f. Skull and horns	.....	No history, A.S.B.
g. Skull and horns (wild var.)	.....	Purchased at Almora, 1888.
h. Skull and horns (dom. var.)	.....	W. Rutledge, 1889.

Bos bubalus.

Bos bubalis, *Linnaeus Syst. Nat.*, 12th ed., i, p. 99 (1766).

Bos bubalus, *Gmelin Syst. Nat.*, i, p. 206 (1788); *Hutton J. A. S. B.*, xv, p. 142.

Bos arnee, *Kerr Linn. Anim. Kingd.*, p. 336 (1792)*; *Cantor J. A. S. B.*, xv, p. 273; *Gray P. Z. S.*, 1855, pl. xl [horns] p. 17.

Bos buffelus, *Blumenbach Handb. Naturges.*, 10th ed., p. 121 (1821)*; *Blanford J. A. S. B.*, xxxvi, p. 195.

Bubalus arna, *Hodgson J. A. S. B.*, x, pp. 469, 912 (1841); *Jerdon Mamm.*, p. 307; *Hodgson J. A. S. B.*, xvi, p. 709; *Horsfield Cat. E. I. Mus.*, p. 179;

Blyth J. A. S. B., xlv, *Burma List*, p. 49; *Sterndale Mamm. Ind.*, p. 490.

Bubalus buffelus, *Gray List Mamm. B. M.*, p. 152 (1843); *Gray Cat. Hodgs. Coll.*, 1st ed., p. 25; *Hodgson J. A. S. B.*, xvi, p. 709; *Blyth J. A. S. B.*, xx, p. 175; *Horsfield Cat. E. I. Mus.*, p. 178; *Kelaart Prodr. Faun. Zeylan.*, p. 87; *Gray Cat. Mamm. B. M.*, iii, p. 25; *Blyth J. A. S. B.*, xxxi, p. 340; *id. Cat.*, p. 163.

The Buffalo; Bhainsa (Domestic Race), Arna, Urna or Jangli bhyns (Wild Race), Hind.; Mung at Bhagulpore; Geraerumi, Gond; Mee harak, Singalese; Kywai, Burmese.

Distribution.—In low lands and swampy places, never in mountains; Assam and Ganges valley including the Nepal terai (Hodgson) and the Sunderbunds. In the peninsula of India from the Ganges southwards to the Godavery River (Jerdon), and westwards to the Weinagunga River and Mandla (Blanford); it is also

found in the northern and eastern districts of Ceylon (Kelaart). It seems very doubtful whether the wild buffalo of Burma and Indo-China is truly feral or merely the escaped domestic animal.

Domesticated, the buffalo is found in Italy, Hungary, Turkey, Egypt, and all through Western Asia to Afghanistan, all over India, Burma, the Malay peninsula and in most of the Islands where an Albino variety is often met with.

a. Skull, horns ♀	.....	No history.
b. Skull, horns ♀	.....	F. Mouat, 1859, A.S.B.
c. Skull, horns ♀	.....	N. Wallich, 1816, A.S.B.
d. Skull, horns ♀	.....	N. Wallich, 1816, A.S.B.
e. Skull, horns ♂	.....	No history.
f. Skull, horns ♂	.....	No history.
g. Skull, horns ♂	.....	No history.
h. Skull, horns ♂	.....	No history.
j. Skull, horns ♂	.....	Sir J. Barlow, 1856, A.S.B.
k. Skull, horns ♂	.....	No history.
l. Skull, horns ♂	Kalibar, Central Assam	J. Hamilton, 1879.
m. Skull, horns ♂	.....	N. Wallich, 1816, A.S.B.
n. Skull, horns ♂	Assam	Major Brodie, 1848, A.S.B.
o. Skull, horns ♂	Assam	Major Brodie, 1848, A.S.B.
p. Skeleton	♂ Purneah	A. Weekes, 1881,
q. Skeleton	♂ Purneah	J. L. Shillingford, 1881.
r. Head, horns	.....	No history.
s. Head, horns	Sudiya, Assam	Col. Graham, 1877.
t. Head, horns ♀	.....	No history.
u. Head, horns ♂	.....	No history.

Bos depressicornis.

Anoa depressicornis, *H. Smith in Griffith An. Kingd.*, iv, p. 293 (1827); *Gray Cat. Mamm. B. M.*, iii, p. 29; *Everett P. Z. S.*, 1878, p. 792, *Meyer* *ibid*, p. 881; *Bartlett*, *ibid*, p. 882.
Antelope depressicornis, *Quoy et Gaimard Ann. Sci. Nat.* (1), xvii, pl. xx; p. 423 (1829); *id. Astrolobe Zoologie*, i, p. 136, pl. xxvi.

Distribution.—The Island of Celebes.

a. Skin, skull ♀ juv. and bones	.....	Zoological Gardens (1881).
b. Skin, skull ♂ juv. and bones.	Celebes	Zoological Gardens (1880).
c. Skin, skull ♀ juv. and bones.	.....	Zoological Gardens (1880).
d. Skin, skull ♀ and body.	.....	Zoological Gardens (1882).

Bos caffer.

Bos caffer, *Sparrman Xongl. Vetensk. Akad. Handl.*, xl, p. 79 (1779).
Bubalus caffer, *Gray List Mamm. B. M.*, p. 153 (1843); *id. Cat. Mamm. B. M.*, ii, p. 28; *Elyth Cat.*, p. 164.

Distribution.—South Africa replaced in West Africa by *B. pumilus* and in East and Central Africa by *B. aequinoctialis* of Blyth to which perhaps specimens "b" and "c" should be referred.

a. Skull and horns	.....	E. Blyth, 1864, A.S.B.
b. Horns ♂ juv.	.....	W. S. Sherwill, 1844, A.S.B.
c. Skeleton ♀ juv.	.....	Zoological Gardens, 1878.

Bos americanus.

Bos americanus, *Gmelin Syst. Nat.*, i., p. 204 (1788).

Bison americanus, *H. Smith Griffith An. Kingd.*, iv, p. 401, with plate (1827); *Gray Cat. Mamm. B. M.*, iii, p. 38; *Allen. Mem. Mus. Comp. Zool.*, iv, no. 10.

The American Buffalo.

Distribution.—Formerly spread over the plains of North America from the Alleghanies to the Rocky Mountains, now nearly extinct and confined to the remoter districts of Saskatchewan, Montana and perhaps Texas.

a. Skeleton, skin ♀	.....	W. Rutledge (1881).
b. Skeleton, skin ♀	.....	Babu H. M. Roy (1881).
c. Skull (no horns)	.. ..	H. A. Ward [Ex.] (1889).

Bos taurus.

Bos taurus, *Linnaeus Syst. Nat.*, 12th ed., i, p. 98 (1766); *Blyth Cat.*, p. 159.

Bos indicus, *Linnaeus Syst. Nat.*, 12th ed., i, p. 99 (1766).

Zebus gibbosus, *Blyth J. A. S. B.*, xxix, p. 282 (1860); *id. Cat.*, p. 159.

Distribution.—The Indian humped race are unknown in an aboriginal state, but are suspected by Blyth to have originated in South Africa rather than in Asia; they are found in a domestic state all over the hotter parts of Africa as far as Natal, in Madagascar, Arabia, South Persia (Blanford), Beluchistan, all over India, and through Indo-China as far as Japan; also in many of the Islands.

a. Skeleton	♀	.....	"Australian dom. race."
b. Skeleton		.....	No history.
c. Skull	♀	.....	"English polled race."

Genus OVIS.

Ovis, *Linnaeus Syst. Nat.*, 12th ed., i, p. 97 (1766).

Ammotragus, *Blyth P. Z. S.*, p. 13 (1840). *Type*, *O. tragelaphus*.

Pseudois, *Hodgson J. A. S. B.*, xv, p. 343 (1846). *Type*, *O. nahoor*.

Caprovis, *Hodgson J. A. S. B.*, xvi, p. 702 (1847). *Type*, *O. musimon*.

The Wild Sheep may be divided into three groups, the larger sheep of Central Asia which also reach North America, and the

smaller sheep distributed through Western Asia and the Mediterranean regions, and thirdly, two forms forming a link with the Goats, *Ovis nahoor* and *Ovis tragelaphus*.

Of the larger group the Museum possesses examples of three distinct species, *i.e.*, *Ovis poli*, *O. hodgsoni*, and *O. canadensis*.

Besides these three the following have been described :—

- (1) *Ovis ammon*, Linnaeus (= *Ægoceros argali*, Pallas.)
- (2) *Ovis nivicola*, Eschscholtz.
- (3) *Ovis jubata*, Peters.
- (4) *Ovis heinsii*, Severtzoff.
- (5) *Ovis nigrimontana*, Severtzoff.
- (6) *Ovis karelini*, Severtzoff.
- (7) *Ovis brookei*, Ward.

Ovis ammon is found in Eastern Siberia, but is apparently very rare in Siberia itself, having been driven southwards by the Cossack sportsmen ; it is very nearly allied to *Ovis hodgsoni* of Thibet from which it seems to be distinguished only by the entire absence of a mane or fringe of long hair on the neck, while *O. hodgsoni* has a well developed white mane on either side and below the neck, and a short gray mane along the dorsal surface of the neck ; the anal patch affords no distinguishing character.

Ovis jubata, from Mongolia north of Peking, seems very nearly allied to *O. ammon*.

Ovis nigrimontana seems to belong to the same type as *O. ammon*.

Ovis karelini and *O. heinsii* both seem to resemble *O. poli* of Blyth very strongly.

Ovis nivicola from Kamschatska is nearly allied to the American species, *Ovis canadensis* from the northern form of which it seems doubtfully distinct. It is quite distinct from *O. ammon*. Finally, *Ovis brookei* might well be a young *O. hodgsoni* of perhaps a hybrid between *O. hodgsoni* and *O. vignei* as suggested by Sterndale (Journ. Bomb. N. H., Soc. i, p. 35).

There seem to be, therefore, three different types of large wild sheep in Asia with several geographical races :—

- (1) *Ovis ammon* from East Siberia represented in Mantchuria by *O. jubata*, in Thibet by *O. hodgsoni*, and in Turkestan by *O. nigrimontana* ?
- (2) *Ovis poli* of the Pamir represented by *O. karelini* in the Thian Shan.
- (3) *Ovis nivicola* of Kamschatska.

Key of the Indian Species.

- . A distinct antorbital pit present.

- b.* Large forms with enormous horns of which the points are always directed more or less horizontally away from each other; with antorbital pit very shallow.
- c.* Space between the horn cores flat; the horns describe a complete circle at least; and the proportion of their basal circumference to their total length is as 1-3.

O. poli, p. 133.

- c*². Space between the horn cores concave; the horns seldom describe a complete circle and are very massive at the base, *i.e.*, the proportion of the basal circumference to the total length of the horn is as 1-2. *O. hodgsoni*, p. 136.

- b.* Smaller forms with smaller horns, with generally converging points and a deep antorbital pit.

- d.* Horns with points hardly converging, with the fronto-orbital edge much rounded; beard and mane very small; animal more or less reddish. *O. vignii*, p. 139.

- d*². Horns with converging points, fronto-orbital edge sharp; beard and mane markedly developed.

O. cycloceros, p. 138.

- a*². No antorbital pits *O. nahoor*, p. 140.

Ovis poli.

Ovis polii, *Blyth P. Z. S.*, p. 62 (1840); *id. J. A. S. B.*, x, p. 858; *id. Ann. Mag. N. H.*, vii, pl. v, fig. 1-4; *Horsfield Cat. E. I. Mus.*, p. 176; *Sclater P. Z. S.*, 1860, p. 443; *Severtzoff Turk. Fevnot*, pp. 84-102, 149, pls. ii, iii, v, figs. 1-2, vi, fig. 1; *Stoliczka P. Z. S.*, 1874, p. 425, pl. liii; *Sir V Brooke and B. Brooke P. Z. S.*, 1875, p. 514; *Biddulph* *ibid.*, p. 157; *Blanford* *ibid.*, p. 540; *Grote P. Z. S.*, 1876, p. 414; *Severtzoff Ann. Mag. N. H.* (4) xviii, pp. 171, 210 & 220; *Przewalsky, Peters. Mitth. Erzb.*, xii 1878, pp. 5, 17; *Blanford Yarkand Mamm.*, p. 83; *Biddulph P. A. S. B.*, 1879, p. 280; *Scully P. Z. S.*, 1881, p. 209; *Blanford P. Z. S.*, 1884, p. 326, with figures.

Ovis karelini, *Severtzoff Turk. Fevnot*, pp. 84-102, 149, pls. i, iv, figs. 3-4, vi, figs. 3-4; *id. Ann. Mag. N. H.* (4), xviii, pp. 171, 210, 217; *Sir V. Brooke and B. Brooke P. Z. S.*, 1875, p. 512; *Blanford Yarkand Mamm.*, p. 80.

Distribution.—This large sheep was first found on the Pamir where its occurrence is mentioned by Marco Polo (Yule's edition, i, pp. 18, 185, 2nd ed, 1875); it was first obtained by Wood near the sources of the Amu Daria and has also been obtained thence by Lockhart (I. M.) and Charles Ellis (Blanford); it also occurs in the Thian Shan Range and all round Lake Issyk (Stoliczka and Severtzoff). It is noted from the Juldus valley on the north and the Altyn tag on the south of the Gobi by Przewalsky. Scully asserts that it must be considered an Indian animal since it occurs as far south as the Shimshal Pamir just north of Gilgit and south of the Mustagh Range.

There are, as can be seen from the list below in the Musum collection, examples of both the typical *Ovis poli* from the Pamir, and also of the smaller form from the Thian Shan, described as *Ovis karelini* by Severtzoff.

After reading Severtzoff's description of the two species (*O. poli* and *O. karelini*) and comparing the descriptions with the specimens in the Museum, it is impossible to make out any real differences between the two except that of size.

Below is a summary of the chief differences between *Ovis poli* and *Ovis karelini* as given by Severtzoff *loc. cit.* :—

<i>Ovis poli.</i>	<i>Ovis karelini.</i>
Horns. —Nuchal edge not rounded.	All edges rounded.
Orbital surface concave.	Orbital surface flat.
Horns four times the length of the skull.	Horns only three times the length of the skull.
Terminal axis of horns more or less horizontal.	Terminal axis of the horns parallel to the basal axis.
Cone formed by the horn-spiral, narrowing towards the skull, <i>i.e.</i> , base outwards.	Cone formed by the horn-spiral with its base towards the skull.
Skulls. —Premaxillæ do not articulate with the nasals and the maxillæ are separated by small bones.	Neither premaxillæ, maxillæ or lacrymals articulate with the nasals.
Lacrymals protrude forward beyond the malars, and both articulate with the maxillæ by serrated sutures.	Lacrymals very large and square, wider than the malars.
Skins. —Mane pure white.	Mane white, shaded with gray.
Light brown of back shades into the white of belly.	Light brown of back separated from the white of belly by a dark line.
White patch of tail marked and separated from the light brown of back by a dark line.	Light brown of back shades off to tail, forming a not well defined patch.

Taking these characters one by one in our specimens—

(1) The nuchal edge is most rounded in the largest specimen

"m" in the list, in the other skulls it seems to get rather sharper as the skull gets younger, so that the sharpness or roundedness of the nuchal edge appears to be a character due purely to age.

- (2) In all the Museum specimens the orbital surface is flat or even rather convex, never concave.
- (3) In the two Pamir specimens the length of the horns are in both cases considerably more than four times the length of the skull, and in the Thian Shan specimens the largest is considerably less. This character, however, seems to be due to the fact that both the Pamir specimens were selected; being chosen from among many others seen lying about on the Pamir on account of the size of their horns, while the specimens from the Thian Shan were shot and brought into the mission so that heads of only average size were got.
- (4) The axes of the horns can hardly be considered a character of much value as has also been shown by Blanford *tom. cit.*, since in the case of one head from the Thian Shan range the horn on one side is very much more horizontal than that on the other.
- (5) With regard to the cones formed by the horn spiral as far as it is possible to judge, in both Pamir and Thian Shan species, the cone has its base towards the skull.
- (6) Neither premaxillæ, maxillæ or lacrymals really articulate with the nasals, in all cases they are separated by a small piece of bone which generally drops out of the skull.
- (7) The lacrymals are not square nor are they wider than the malars in any of the skulls in the Museum Collection.

There are only skins of the Thian Shan form in the Museum; there are no skins of the true Pamir forms, as far as I am aware, in any European or other Museum; with regard to our skins—

- (8) The mane is pure white below and laterally; dorsally, in all cases but one, it is mixed with gray; the one exception being what appears to be the oldest animal
- (9) In none of the skins can a dark brown lateral line be seen separating the light brown of the back from the dirty yellow of the belly.
- (10) The white patch on the tail is very well marked in all the skins except the old male mentioned above, where the change of colour is not so abrupt.

In the females there is little or no mane and the anal patch neither marked nor large.

The above I think is sufficient to justify the combination of the Pamir typical forms and Thian Shan specimens brought back

by the Yarkand Expedition, under the name of *Ovis poli*, even if the sheep described by Severtzoff as *Ovis karelini* should turn out to really differ from the typical *Ovis poli* of the Pamir.

a. Skin, skull, ♂	nr. Kashgar.	F. Stoliczka, 1877.
horns.		
b. Skin, skull, ♂	" "	F. Stoliczka, 1877.
horns.		
c. Skin, skull, ♂	" "	F. Stoliczka, 1877.
horns.		
d. Skin, skull, ♂	" "	F. Stoliczka, 1877.
horns.		
e. Skin, skull, ♀	" "	F. Stoliczka, 1877.
horns.		
f. Skin, skull, ♀	" "	F. Stoliczka, 1877.
horns.		
g. Skin, skull, ♀	" "	F. Stoliczka, 1877.
horns.		
h. Skin, ♀	" "	F. Stoliczka, 1877.
(no head.)		
j. Stuffed ♂	" "	F. Stoliczka, 1877.
k. Head ♀	" "	F. Stoliczka, 1877.
stuffed.		
l. Skeleton	" "	F. Stoliczka, 1877.
(no skull.)		
m. Skull and ♂	Hunza, nr. Gilgit	J. Biddulph, 1879.
horns.		
n. Skull and ♂	Tagdanbash, Pamir	Sir W. S. A. Lockhart, 1886.
horns.		
o. Skull and ♂	.....	No history, A. S. B.
horns. juv.		
p. Skull and ♂	.....	No history, A. S. B.
horns. juv.		
q. Skin and ♀	nr. Kashgar	F. Stoliczka, 1877.
skull.		

Ovis hodgsoni.

- Ovis nayaur*, *Hodgson As. Res.*, xviii, pt. 2, p. 135, *with plate* (1833) [pt.]
Ovis hodgsoni, *Blyth P. Z. S.*, p. 65 (1840); *P. L. Sclater P. Z. S.*, 1860, p. 129; *Sir V. Brooke and B. Brooke, P. Z. S.*, 1875, p. 520.
Ovis ammonoides, *Hodgson J. A. S. B.*, x, pp. 230, 913 (1841); id. *ibid*, xv, p. 338; *Hutton J. A. S. B.*, xvi, p. 568.
Caprovis argali, var 2, *Gray Cat. Mamm. B. M.*, iii, p. 174 (1852); *Adams P. Z. S.*, 1858, p. 527.
Ovis ammon, *apud Horsfield Cat. E. I. Mus.*, p. 176 (1851); *Blyth Cat.*, p. 177; *Kinloch Large Game Shooting*, i, p. 19 with plate of head; *Blanford J. A. S. B.*, xli, p. 40.
Ovis brookei, *Ward P. Z. S.*, p. 143 (1874); *Sir V. Brooke and B. Brooke P. Z. S.*, 1875, p. 521; *Sterndale J. Bomb. Soc.*, i, p. 35.

The Ammon; Nyan or Gnow, Tibetan.

Distribution.—The Nyan has been got chiefly from Ladak (Kinloch) and the country north of Gurwhal, and by Hodgson from the higher region of the Himalayas north of Nepal and Sikkim.

With regard to the distinctions between this species and the other two of which there are examples in the Museum, the skull differs from that of *O. poli* but slightly, in *O. hodgsoni* there is a very marked depression between the bases of the horn cones on the forehead, while the space is quite flat in *O. poli*; the great difference, however, is in the horns, while those of *O. hodgsoni* are enormously massive at the base, they are never very long, *i.e.*, they describe a little more than half a circle when viewed laterally, while those of *O. poli* are considerably more slender at their bases and the older ones describe a complete circle when viewed laterally; the proportions of the circumference at the base to the total length measured along the frontal surface is as follows in typical specimens:—*O. hodgsoni*, circumference of the horn at the base, 17 inches; length of horn, 30 inches; *O. poli*, circumference, 15 inches; length, 50 inches.

The horns of *Ovis canadensis* are of much the same external form as those of *O. hodgsoni* as far as the curves are concerned, they differ, however, markedly in being almost smooth and not marked by the very conspicuous transverse furrows and ridges present in the horns of both *O. poli* and *O. hodgsoni*; the nuchal edge in *O. canadensis* is very much rounded, much more so than in the largest and oldest horns of *O. poli*, and the nuchal surface is also markedly rounded instead of being flat as in *O. hodgsoni* and *O. poli*; in the skull the premaxillæ and nasal bones are much shorter than in those of the Asiatic Argalis and they are distinctly articulated the one with the other, which is not the case with the Asiatic forms.

Altogether the Asiatic and American forms seem very distinct.

a. Skull and ♂ horns.	.....	G. T. Lushington ? A. S. B.
b. Skull and ♂ horns.	.....	No history.
c. Skull and ♂ horns.	.....	No history.
d. Skeleton ♂	.....	G. T. Lushington, A. S. B.
e. Stuffed ♂	.....	G. T. Lushington, A. S. B.
f. Head and ♂ horns.	.. ...	No history.
g. Skin and ♀ skull.	.....	W. T. Blanford, 1870.
h. Skull ♀ Thibet ?		No history, A. B. S.
j. Skeleton ♀	.....	No history, A. B. S.
k. Head and ♂ horns.	.....	Capt. Michell.
l. Skin, skull ♂ and horns.	btw. Ladak and Kukchu 15,000 ft.	N. Elias, 1879.

Ovis canadensis.

Ovis canadensis, *Shaw Nat. Misc.*, xv, pl. 610 (1804); *Biddulph P. Z. S.*, 1885, p. 678.

Ovis montana, *G. Cuvier Regne Anim.*, 1st ed., i, p. 267 (1817).

Ovis cervina, *Desmarest N. Dict. d'Hist. Nat.*, xxi, p. 553 (1818); *Alston Biol. Centr. Am. Mamm.*, p. iii.

Ovis pygargus *H. Smith Griffith An. Kingd.*, iv, p. 318, with plate (1827).

Ovis californianus, *Douglas Zool. Journ.*, iv, p. 332 (1828).

The American Bighorn.

Distribution.—The American Bighorn is found along the whole range of the Rocky Mountains on both the eastern and western slopes, from 68° N. as far as Sonora about 31° N.; it is also found in all the lesser ranges along the Eastern Pacific coast from Alaska to California.

It seems probable that there are two species, or, at any rate, races of bighorns; the northern one much resembling *O. nivicola*, the Kamschatkan wild sheep, and a southern one. (See Guillimard *P. Z. S.*, 1885, p. 675. and Biddulph *l. c.*)

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|--------------------------------|-------|-------------------------|
| a. Skin, skull ♂
and horns. | | H. A. Ward [Ex.], 1887. |
| b. Skin, skull ♀
and horns. | | H. A. Ward [Ex.], 1887. |

Ovis cycloceros.

Ovis cycloceros, *Hutton Calc. Journ. N. H.*, ii, p. 514, pl. xix (1842); *id.* *J. A. S. B.*, xv, p. 152; *P. L. Sclater P. Z. S.*, 1860, p. 128, woodcut and pl., lxxx; *Blyth Cat.*, p. 177; *Ferdon Mamm.*, p. 294; *Kinloch Large Game Shooting*, i, p. 29, with plate of head; *Blanford Persia*, p. 87; *Murray Zool. Sind*, p. 59; *Sterndale Mamm. Ind.*, p. 435; *Thomas Linn. Trans.* (2), v, p. 63.

Ovis vignei, *apud Blyth P. Z. S.*, p. 70 (1840); *Gray Cat. Mamm. B. M.*, iii, p. 172; *Horsfield Cat. E. I. Mus.*, p. 175; *Adams P. Z. S.*, 1858, p. 526.

The Oorial; Guch ♂, Mish ♀, Persian; Huriar, or Orial, Punjab; Kuch in Suliman range; Koh-i-poombur, Afghan.

Distribution.—From the Punjab Salt Range and the Suleiman Range, especially round Peshawur, southwards to Sind and westwards to the Parapamisus Range, and to Gwadar in Beluchistan and possibly to Shiraz (Blanford); Astrabad in Northern Persia (Beresford Lovett); this sheep is generally found at lower elevations than the other wild sheep and in places where the heat is very excessive in summer.

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|--------------------------------|---------------------|-----------------------|
| a. Skull, horns ♂ | Astrabad, N. Persia | B. Lovett, 1885. |
| b. Head, stuffed
and skin ♂ | Jalk, Beluchistan | W. T. Blanford, 1877. |
| c. Skull, horns ♂ | ..... | W. Theobald, A. S. B. |
| d. Skull, horns ♂ | ..... | W. Theobald, A. S. B. |
| e. Skull, horns ♂ | Punjab | W. T. Blanford. |
| f. Skull, horns ♂ | ..... | A. S. B. |
| g. Skull, and ♀
horns. | | W. Theobald, A. S. B. |
| h. Skull, horns ♂ | Afghanistan ? | Purchased, 1871. |

- j. Skull, horns, ♂ Khawja, Afghan. J. E. T. Aitchison, 1886.
 skin.
 k. Skeleton ♂ Zoological, Gardens, 1882.
 l. Skin, skull ♀ Dizak, Beluchistan, W. T. Blanford.
 23-3-72.
 m. ? Skin, skull Shiraz, Persia Sir O. St. John.
 juv.
 n. Skin, skull ♀ A. S. B.
 o. Skull, and ♂ British Beluchistan E. J. Jones, 1889.
 horns.

Ovis vignii.

Ovis vignii, Blyth P. Z. S., p. 70 (1840); *Wagner Hugel's Kaschmir*, iv, p. 581; *Gray Cat. Mamm. B. M.*, iii, p. 172; *Horsfield Cat. E. I. Mus.*, p. 175; *Adams P. Z. S.*, 1858, p. 526; *P. L. Sclater P. Z. S.*, 1860, p. 127, wood-cut and pl. lxxix; *Scully P. Z. S.*, 1881, p. 209; *Sterndale Mamm. Ind.*, p. 435.

Ovis montana, *apud Cunningham Ladak*, p. 199, pl. vii (1854).

Shapoo, Ladak; Sha, Thibet; Oorin, Astor district.

Distribution.—Western Thibet and Ladak (Kinloch) extending to Gilgit (Scully).

There was formerly considerable confusion with regard to the distinctions between this sheep and the Oorial; for some time they were considered identical until Sclater *l. c.* showed the distinctions between the two; the one (*Ovis vignii*) occurring only, as far as is known, in Ladak and the upper valley of the Indus; the other having a wider distribution extending from the Punjab throughout Afghanistan.

- a. Skin, skull ♂ Ladak (Strachey)? India Mus., London.
 horns.
 ? b. Skull ♀ A. S. B.
 juv.

Ovis gmelini.

Ovis gmelini, Blyth P. Z. S., p. 69 (1840); *Blanford Persia*, p. 87; *Danford and Alston P. Z. S.*, 1877, p. 276; *id. P. Z. S.*, 1880, p. 55, with 6 figs
Ovis orientalis, *apud Keyserling and Blasius Wirbelth. Europ.*, pp. 5, 29 (1840); *Gray Cat. Mamm. B. M.*, iii, p. 172.

? *Ovis anatolica*, *Valenciennes Comptes Rend.*, xliii, p. 65 (1856).

Distribution.—The Elburz Mountains (Blanford), Erzerroom (Blyth), the northern slopes of the Taurus, and central parts of Asia Minor (Danford).

- a. Frontlet No history, A. S. B.
 b. Skull and No history, A. S. B.
 horns.
 c. Skull and ♂ Shameran Mts., N. of W. T. Blanford.
 horns. Teheran.
 d. Stuffed ♂ W. Rutledge (1869).

e. Stuffed ♂	.....	No history.
f. Skin and juv. skull.	.....	No history.

Ovis nahoor.

- ? Ovis nayaur, *Hodgson As. Res.*, xviii, p. 135, with plate (1833) [pt.]
 Ovis nahoor, *Hodgson P. Z. S.*, p. 197 (1834); *Bichenov P. Z. S.*, 1838, p. 79;
Blyth P. Z. S., 1840, p. 66; *Hodgson J. A. S. B.*, x, pp. 231, 913; id. *ibid.*,
 xi, p. 283; *P. L. Sclater P. Z. S.*, 1860, p. 129; *Blyth Cat.*, p. 178; *Ferdon*
Mamm. p. 296; *Kinloch Large Game Shooting*, i, p. 25; with plate; *Blan-*
ford J. A. S. B., xli, p. 40; *Milne Edwards Rech. Mamm.*, p. 357, pls.
 lxviii, lxix; *Blanford Yarkand Mamm.*, p. 85, pl. xiv.
 Ovis burrhel, *Blyth P. Z. S.*, p. 67 (1840); id. *Ann. Mag. N. H.*, vii, pl. v,
 fig. 7.
 Pseudois nahoor, *Hodgson J. A. S. B.*, xv, p. 343 (1846); *Gray Cat. Mamm.*
B. M., iii, p. 177; *Horsfield Cat. E. I. Mus.*, p. 176; *Adams P. Z. S.*, 1858,
 p. 527; *Prewalski Peters. Mitth. Engb.*, xii, 1878, p. 17; *Lydekker J. A.*
S. B., xlix, p. 131.

The Burrhal; Na, Sna or Gnao in Western Thibet; Nirvati, Nepal; Wa in Sutlej district.

Distribution.—Himalayas from the Nubra Valley, Ladak, (Adams) to Sikkim (Hodgson); also the Kuenlun (Stoliczka) Altyn Tagh south of Lob Nor (Prewalski) and Moupin, Eastern Tibet (Père David); it is generally found high up, seldom descending to the level of the forests.

This is a very interesting form since it is in many ways a link between the genera Capra and Ovis; this has been specially noticed by Lydekker (*l. c.*)

Among its Caprine characters are the absence of any trace of the antorbital pits, the shape of the basioccipital which resembles that of a goat in that the anterior tubercles are the larger than the posterior ones, while in the case of the sheep the reverse is the case, and the horns which have a slight tendency to the upward spiral so characteristic of the Markhor.

Among the Ovine characters are the absence of any odour, no trace of a mane or beard, and presence of interdigital pores on all the feet.

Ovis cylindricornis, which was described by Blyth (*P. Z. S.*, 1840, p. 68) many years ago from a single head from the Caucasus, has recently been redescribed at length by Dennik in Proceedings of the Society of Naturalists in St. Petersburg (translated by Delmar Morgan, *Ann. Mag. N. H.* (5) xix, p. 450) as Capra pallassii and by Eug. Buchner (Memoirs of the Imperial Academy of Sciences at St. Petersburg (7), xxxv, no. 8) as Capra cylindricornis of Blyth.

Judging from the descriptions and figures given by these two Russian Naturalists, the Goat in question seems to be very nearly allied to Ovis nahoor and is probably its representative in the Caucasus.

a. Skull and ♂ horns.	.....	G. T. Lushington, A.S.B.
b. Frontlet ♂ juv.	.....	A.S.B.
c. Frontlet ♂ juv.	.....	A.S.B.
d. Frontlet ♀	.....	A.S.B.
e. Skull and ♂ horns.	.....	No history.
f. Frontlet ♀	.....	A.S.B.
g. Skull and ♂ horns.	.....	A.S.B.
h. Skull and ♂ horns.	.....	A.S.B.
j. Stuffed juv.	.....	No history, A.S.B.
k. Skeleton ♀	.....	A.S.B.
l. Skeleton ♂	.....	F. Wilson.
m. Skin and ♂ skull.	.....	E. Smyth, 1862, A.S.B.
n. Skin and ♂ skull.	nr. Tam, Sanju Valley, Kuenlun Mts.	F. Stoliczka, 1874.
o. Skin and ♀ skull.	.....	A.S.B.
p. Flat skin	Sikkim	L. Mandelli, 1877.
q. Skin, skele- ♀ ton. juv.	.....	W. Rutledge, 1878.
r. Skin, skull ♀ juv.	.....	W. Rutledge, 1880.
s. Skin ♀	.....	W. Rutledge, 1879.
t. Skin, skele- ♀ ton.	.....	W. Rutledge, 1877.
u. Skin	.....	No history.
v. Skin ♀	.....	No history.
w. Skin, skull juv.	Sikkim ?	L. Mandelli, 1877.
x. Skeleton ♂ juv.	.....	W. Rutledge, 1879.
y. Skeleton, ♀ skin.	.....	W. Rutledge, 1879.
z. Skeleton ♀	.....	W. Rutledge, 1879.
a ² . Skeleton ♂	.....	W. Rutledge, 1880.
b ² . Stuffed juv.	.....	No history, A.S.B.

Ovis tragelaphus.

Ovis tragelaphus, *Desmarest Mamm.*, p. 486 (1822); *Blyth P. Z. S.*, 1840, p. 75; *Lataste Act. Soc. Linn. Bordeaux*, xxxix, p. 288.

Ovis ornata, *Is. Geoff. St. Hil. Descript. Egypt Hist. Nat.*, ii, p. 742, *Atlas*, i, pl. vii, fig. 2 (1813).

Ammotragus tragelephus, *Gray Cat. Mamm. B. M.*, iii, p. 179 (1852).

The Aoudad or Barbary Wild Sheep.

Distribution.—The mountains of North Africa from Barbary to Tunis.

a. Skin and ♂ skeleton.	W. Rutledge, 1881.
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Genus **CAPRA**.

Capra, *Linnaeus Syst. Nat.*, 12th ed., i, p. 94 (1766).

Hircus, *Boddaert Élench. Anim.* (1785)*.

Aegoceros, *Pallas Zoog. Ross. As.*, i, p. 224 (1831).

Hemitragus, *Hodgson F. A. S. B.*, x, p. 913 (1814). *Type*, *C. jemlaica*.

Ibex, *Hodgson F. A. S. B.*, xvi, p. 700 (1847).

Out of the ten recognized species of wild goats no less than five are found in India, all of which are represented in the Museum Collection, of the others *Capra pyrenaica* and *C. ibex* are found in the Pyrenees and Alps respectively; *Capra caucasica* in the Caucasus and *Capra sinaitica* and *C. walie* in Palestine, Egypt, and Abyssinia.

Sterndale (*J. Bomb. Soc.*, i, p. 26) has recently described a head of an ibex from the Kishengunge country to the west of Kashmir, which seems to differ considerably from the ordinary *C. sibirica*, but until a little more is known about it, it seems rash to add it to the list of Indian Mammals; Sterndale has named it *Capra duvergnii*.

Key of the Indian Species.

a. Goats with long scimitar-shaped horns with knots at intervals along their length.

b. Horns with a sharp anterior edge; the side of the horns being convex; very slight traces of the knots.

C. aegagrus, p. 142.

b². Horns with a flat anterior surface with distinct knots at regular intervals . . . *C. sibirica*, p. 143.

a². Goats with spirally twisted horns, the spiral being from right to left, beginning from the base . . . *C. falconeri*, p. 145.

a³. Goats with short horns never exceeding 18 inches.

c. Horns set very parallel to one another; the fronto-nuchal edge sharp, the fronto-orbital edge rounded off so that the frontal and nuchal surfaces form a continuous curve.

C. hylocrius, p. 146.

c². Horns very divergent, forming about a right angle, but with the tips again converging; horns two-sided with a sharp anterior edge; flat orbital and rounded nuchal surface. . . . *C. jemlaica*, p. 146.

Capra aegagrus.

Capra aegagrus, *Gmelin Syst. Nat.*, i, p. 193 (1788); *Hutton Calc. Journ. N. H.*, ii, p. 521, pl. xix; id. *F. A. S. B.*, xv, p. 161; *Kotschy Verh. Zool. Bot. Ver. Wien*, iv, p. 201*; *Blasius Säugeth. Deutsch.*, p. 485; *Blyth Cat.*, p. 176; *P. L. Sclater P. Z. S.*, 1874, p. 89; *Blanford P. Z. S.*, 1874,

p. 248; *Danford P. Z. S.*, 1875, p. 458; *Blanford F. A. S. B.*, xliv, p. 15; *Danford and Alston P. Z. S.*, 1877, p. 276; *Blanford Persia*, p. 89; *Murray Zool. Sind*, p. 56; *P. L. Sclater P. Z. S.*, 1886, p. 315, pl. xxxi; *Radde Zool. F. B.*, iv, p. 1064.

"*Aegagrus*," *Pallas Spic. Zool.*, xi, p. 43, pl. v, figs. 2, 3 (1776).

Aegoceros aegagrus, *Pallas Zoog. Ross. As.*, i, p. 226, pl. xvi, figs. 3, 4, 5 (1831).

Capra caucasica, *apud Gray List Mamm. B. M.*, p. 167 (1834); *Adams P. Z. S.*, 1858, p. 525.

Capra blythi, *Hume P. A. S. B.*, p. 240 (1874).

Capra picta, *Erhardt Fauna der Cycladen* (1858)*; *P. L. Sclater P. Z. S.*, 1872, p. 689, pl. lviii.

The Sind Ibex · Pasang ♂, Boz ♀, Persia; Surrah, Beluchi.

Distribution.—From Crete and several of the Cyclades eastward through Asia Minor, occurring on the Taurus (Danford), Mount Ararat and the Little Cacausus and sparingly on the southern slopes of the Great Cacausus, all over Persia, Trans-caspia, Beluchistan and Afghanistan to the borders of India where it is found in the Pubb and Suleiman ranges, probably as far north as the Khyber Pass.

a. Stuffed	♂	Sind	A. E. Watson, 1876.
b. Stuffed	♀	Sind	A. E. Watson, 1876.
c. Skin, skull,	♂	Sind	Karachi Mus. [Ex.], 1879.
horns.			
d. Head stuffed	♂	Sind	Karachi Mus. [Ex.], 1878.
e. Skull, horns	♂	.....	J. A. Murray, 1882.
f. Skull, horns	♂	Ispahan	Sheik Harri, 1878.
g. Horns	♂	nr. Shiraz	Sir O. St. John.
h. Skull, horns	♂	Afghanistan	Sir A. Burns, A. S. B.
j. Head stuffed	♀	Sind, 17-5-75	W. T. Blanford.
k. Head stuffed	♂	Ispahan	Sheik Harri, 1878.
		juv.	
l. Skin		.....	No history.
m. Skin	♂	juv. E. of Bampur, Baluch.,	W. T. Blanford.
		4,000 ft., 30-3-72.	
n. Skeleton, skin	♂	.....	Karachi Mus. [Ex.], 1879.
o. Skull, horns	♀	.....	No history.

Capra sibirica.

"*Skyin*," *Cunningham Ladak*, p. 200.

"*Ibex alpium sibericarum*," *Pallas Spic. Zool.*, xi, p. 31, pl. iii, 1776.

Capra sibirica, *Meyer Zool. Annal.*, i, 397 (1794)*; *Radde Ost Siberien*, p. 243, pl. x, figs. 1-4; *Blyth Cat.*, p. 176; *Ferdon Mamm.*, p. 292; *Kinloch Large Game Shooting*, i, p. 32 [with plate of head]; *Severtzoff Ann. Mag. N. H.* (4), xviii, p. 333; *Lydekker F. A. S. B.*, xlv, p. 286; *Blanford Yarkand Mamm.*, p. 86; *Scully P. Z. S.*, 1881, p. 208; *P. L. Sclater P. Z. S.*, 1886, 316; *Thomas Linn. Trans.*, (2) v, p. 64.

Aegoceros ibex, *Pallas Zoog. Ross. As.*, i, p. 224, pl. xv, figs. 1-2 [horns] (1831).

Capra ibex, *apud Hodgson F. A. S. B.*, x, p. 913 (1841); *id. F. A. S. B.*, xi, p. 283.

Capra sakeen, *Blyth F. A. S. B.*, xi, p. 283 (1842).

Aegoceros skyn, *Wagner Schreb. Säugeth. Suppl.*, iv, p. 491 (1844).

Ibex sakin, *Hodgson F. A. S. B.*, xvi, p. 700 (1847)

Capra himalayana, *Gray Cat. Mamm. B. M.*, iii, p. 150 (1852); *Adams P. Z. S.*, 1858, p. 523.

Capra skyn, *Severtzoff Ann. Mag. N. H.* (4), xviii, p. 334 (1878); *Przewalsky Peters. Mitth. Erzb.*, xii, 1878, p. 5.

Capra pallasii, *apud Schinz N. Denkschr. all. Schweiz. Gesellsch.*, ii, p. 9*.

The Himalayan Ibez; Skyn ♂ l'Danma ♀ of Little Thibet; Kyl, Kashmir; Buz on the Upper Sutlej; Tangrol of Kulu.

Distribution.—The Himalayas from the Gilgit district (Scully), eastwards to Nepal, but not east of Nepal, also the higher ranges of Thibet (Hodgson), the Thian Shan (Severtzoff) and the Altai and Sajan Ranges, but not extending east of Lake Baikal (Radde); it frequents the higher ranges seldom descending to the tree level. It was also got by the Afghan Boundary Commission in the Paromismus Mountains.

a. Stuffed	♂	Kalsi, Ladak	N. Elias, 1879.
b. Flat skin		Gilgit	J. Scully, 1888.
c. Flat skin	♂	Gilgit, 27-4-79	J. Scully, 1888.
d. Skin	juv.	Gilgit	J. Scully, 1888.
e. Skin, skull,	♀	nr. Kashgar	F. Stoliczka, 1874.
horns.			
f. Skin, skull,	♀	nr. Kashgar	F. Stoliczka 1874.
horns.			
g. Skin, skull,	♀	Tam, Sanju, Kuenlun	F. Stoliczka, 1874.
horns.		Mts., 28-10-73.	
h. Skin and	♂ juv.	nr. Kashgar	F. Stoliczka, 1874.
horns.			
j. Feet		nr. Kashgar	F. Stoliczka, 1874.
k. Horns,	♂ juv.	nr. Kashgar	F. Stoliczka, 1874.
l. Horns,	♂ juv.	nr. Kashgar	F. Stoliczka, 1874.
m. Stuffed head	♂	nr. Kashgar	F. Stoliczka, 1874.
n. Skull, horns	♂	nr. Kashgar	F. Stoliczka, 1874.
o. Skull, horns	♂	.....	Purchased 1871.
p. Skull, horns	♂	.....	Purchased 1871.
q. Skull, horns	♂	.....	Purchased 1871.
r. Frontlet,	♂	.....	No history, A. S. B.
horns.			
s. Frontlet,	♂	.....	No history, A. S. B.
horns.			
t. Frontlet,	♂	...	No history, A. S. B.
horns.			
u. Skeleton, no		nr. Kashgar	F. Stoliczka, 1874.
skull.			

Capra sinaitica.

Capra nubiana, *F. Cuvier Hist. Nat. Mamm.* (1825).

Capra sinaitica, *Hempr. et Ehr. Symb. Phys.*, i, pl. xviii (1828); *P. L. Sclater P. Z. S.*, 1886, p. 316, pl. xxxii.

Capra arabica, *Ruppell N. Wirbelth.*, p. 17 (1835).

Ægoceros beden, *Wagner Schreb. Säugeth.*, v, p. 1303 (1836).

Capra beden, *Tristram, P. Z. S.*, p. 85 (1866).

Distribution.—Mountains of Upper Egypt, Sinai and Palestine.

a. Skull, horns, ♂ Sinaitic peninsula B. M. P. Carter [Ex.]

Capra falconeri.

- Aegoceros* (Capra) *falconeri*, *Wagner Munch. Gel. Anz.*, ix, p. 430 (1839).
Capra megaceros, *Hutton Calc. Journ. N. H.*, ii, p. 535, pl. xx (1842); *id.*
J. A. S. B., xv, p. 161; *Blyth Cat.*, p. 176; *Ferdon Mamm.*, p. 291;
Kinloch Large Game Shooting, i, p. 37 [with plate].
Capra falconeri, *Wagner Hugel's Kaschmir*, iv, p. 579, with plate (1848);
Blanford J. A. S. B., xlv, p. 17; *Scully P. Z. S.*, 1881, p. 209;
P. L. Sclater P. Z. S., 1886, p. 317.
Capra megaceros, *Cunningham Ladak*, p. 200, pl. vii (1854).
Hircus megaceros, *Adams P. Z. S.*, p. 525 (1858).
Capra jerdoni, *Hume P. A. S. B.*, 1874, p. 240; *Kinloch Large Game Shooting*, ii, p. 15 [with plate].

The Markhor; Markhor (Snake-eater) of the Afghans; Rap-hochhe ♂ Ramochhe ♀ of Ladak.

Distribution.—The Pir Pinjal range to the south of Kashmir extending northwards to Gilgit (Scully), eastwards to the Beas River (Adams), and southward through the Suleiman Range as far as Mittun Kote (Adams).

There are certainly two varieties of Markhor, whether they can be considered as two different species or not still remains undecided; the scantiness of the Museum collections of these animals prevents my forming an opinion on the subject, I have, therefore, followed Blanford, who is of opinion that the two forms run into one another and cannot be therefore separated as two species.

In the Kashmir variety, which is found in the Pir Pinjal and also in the Gilgit district, the horns are spirally twisted about an imaginary axis, the spiral being very open in some cases as in the one figured in "Hugel's Kaschmir."

In the Suleiman variety the horns are perfectly straight, but a spiral ridge runs round the horn which gives the horn a very different appearance; both varieties are very well figured by Colonel Kinloch in his book on the Large Game of the Himalayas.

Should the Suleiman variety prove to be sufficiently distinct to be considered a separate species, it would be called *Capra megaceros* of Hutton.

a. Skin [no horns]	Gilgit	J. Scully, 1888.
b. Skin ♂ juv.	Jutyel Mula, Gilgit	J. Scully, 1888.
c. Skin juv.	Gilgit	J. Scully, 1888.
d. Skull and ♂ horns.	.....	W. T. Blanford.
e. Skull and ♂ one horn.	.....	Sir A. Burnes, 1840, A.S.B.
f. Skull and ♂ horns.	.....	W. T. Blanford, 1879.
g. Frontlet ♂	.....	W. Theobald, A.S.B.
h. Skin and juv. skull.	.....	W. Rutledge, 1868.
j. Skull, horns ♂	Gilgit	J. Scully, 1888.

Capra jemlaica.

Capra jemlanica, *H. Smith, Griffith An. Kingd*, iv, p. 308 [plate very bad] (1827); *Sclater P. Z. S.*, 1886, p. 317.

Capra jharal, *Hodgson As. Res.*, xviii, pt. 2, p. 129, with plate (1831); *id. P. Z. S.*, 1834, p. 106; *id. J. A. S. B.*, iv, p. 491; *id. ibid.*, p. 710.

Hemitragus quadrimammis, *Hodgson J. A. S. B.*, x, p. 913, (1841).

Hemitragus jemlaicus, *Gray Cat. Mamm. B. M.*, iii, p. 144 (1852); *Adams P. Z. S.*, 1858, p. 523; *Blyth Cat.*, p. 175; *Ferdon Mamm.*, p. 286; *Blanford J. A. S. B.*, xli, p. 40; *Kinloch Large Game Shooting*, ii, p. 11 [with plate of head]; *Atkinson N. W. P. Gazett.*, xi, p. 33; *Lydekker J. A. S. B.*, xlvi, p. 286.

The Tahr; Jharal of Nepal; Jogle of Kashmir; Kras of Khristwar; Kart of Kulu district; Esbu of the Sutlej.

Distribution.—The Himalayas, from 6,000 ft. or 7,000 ft. upwards; not recorded west of the Pir Pinjal (Adams) and eastwards, occurs doubtfully in Sikkim.

a. Stuffed	♂	Pir Pinjal, South Slope	N. Elias (1879).
head and			
skin.			
b. Stuffed	♂	nr. Mussooree	Miss Milman (1873).
c. Skull and	♂	.....	B. H. Hodgson, A.S.B.
horns.			
d. Skull and	♂	.....	A.S.B.
horns.			
e. Skull and	♂	.....	A.S.B.
horns.			
f. Skull and	♂	.....	B. H. Hodgson, A.S.B.
horns.			
g. Frontlet	♀	.. ..	A.S.B.
and horns.			
h. Skeleton	♂	.....	A.S.B.
j. Frontlet	♂	.....	No history, A.S.B.

Capra hylocrius.

Kemas hylocrius, *Ogilby P. Z. S.*, p. 81 (1837); *Blyth J. A. S. B.*, xi, p. 880; *id. J. A. S. B.*, xxviii, p. 291.

Capra (Ibex) worryato, *Gray Ann. Mag. N. H.* (1), x, p. 267 (1842).

Hemitragus hylocrius, *Blyth Cat.*, p. 175 (1863); *Ferdon Mamm.*, p. 288; *McMaster Notes on Ferdon*, p. 117.

Kemas worryato, *Gray Cat. Mamm. B. M.*, iii, p. 146 (1852).

Capra hylocrius, *P. L. Sclater, P. Z. S.*, p. 318 (1886).

The Nilgiri Ibex; Warra-ardu or-artu, Tamil.

Distribution.—This goat is entirely confined to the hills in Southern India, *i.e.*, the Nilgiris and Cardamums or Ghats of Travancore and Cochin.

a. Skin	♀	Nilgiri hills	Madras Mus., 1872.
b. Skull and	♂	Nilgiri hills	Madras Mus., 1879.
horns.			

c. Skull and ♀ horns.	Nilgiri hills	Madras Mus., 1879.
d. Skull and ♂ horns.	Travancore	Rev. J. Baker, A.S.B.
e. Skull and ♀ horns.	.....	T. C. Jerdon, A.S.B.
f. Skull and ♀ horns.	.....	L. C. Stewart, A.S.B.
g. Skull and ♂ horns.	Deviculam, Travancore	A. W. Turner, 1889.

Capra hircus.

Capra hircus, *Linnaeus Syst. Nat.*, 12th ed., i, p. 94 (1766); *Blyth Cat.*, p. 176.

The Domestic Goat.

a. Head stuffed	.....	No history.
b. Head stuffed	.....	No history.
c. Head stuffed	Upper Burma	J. Anderson, 1869.
d. Head stuffed	.....	W. Rutledge, 1864.
e. Head stuffed	.....	Mrs. Turnbull, 1875.
f. Skull and horns.	Sikkim breed	A.S.B.
g. Skin and skull.	Shoho breed of Abyssinia.	W. T. Blanford, 1869.
h. Skin of head.	♂ [which gave milk]	Zoological Gardens, 1878.

Genus NEMORHÆDUS.

Nemorhædus, *H. Smith, Griffith An. Kingd.*, v, p. 352 (1827); [as a sub-genus.]

Kemas, *Ogilby P. Z. S.*, p. 138 (1836). *Type*, *N. goral*.

Capricornis, *Ogilby P. Z. S.*, p. 139 (1836). *Type*, *N. bubalina*.

Urotragus, *Gray Ann. Mag. N. H.* (4), viii, p. 371 (1871). *Type*, *N. caudata*.

This genus is rather in confusion in consequence of the large number of species that have been described, but which are doubtfully distinct from one another. The type of the genus is *Nemorhædus sumatrensis*; *N. goral* is certainly distinct, but *N. bubalina* seems to differ from *N. sumatrensis* only in being a little larger; *N. rubida* described by Blyth seems to be only a very reddish form of *N. sumatrensis*; *N. crispus* from Japan appears to be distinct; *N. swinhoei* from Formosa was considered by Blyth to be, like *N. rubida* merely a variety of *N. sumatrensis*; finally Milne Edwards in his *Recherches Mammifères* described four new species (1) *N. caudatus* which seems to most resemble *N. goral* but has a very long tail; (2) *N. griseus* and (3) *N. cinereus* which seem somewhat intermediate between the goral and serow type; and finally (4) *N. edwardsii* which M. Milne Edwards allows is very nearly allied to *N. bubalina* from which it differs only in

being somewhat smaller and redder; since these are exactly the differences between *N. sumatrensis* and *bubalina* as pointed out by Blyth, the inference is obvious that *N. edwardsii* is merely the same reddish variety of *N. sumatrensis* as that described by Blyth as *N. rubida*.

The skull of the true *N. sumatrensis* has been compared with the description and figure in M. Milne Edwards' work and agrees with it very well.

Key of the Indian Species.

- a. Smaller, (head and body 50 inches); skull with a distinct ridge across the check in front of the eye; no antorbital depression. **N. goral**, p. 148.
- a². Larger, (head and body 60 to 66 inches); skull with a shallow depression in front of the eyes for the reception of the antorbital gland.
- b. Larger, (head and body generally over 5 feet); black; legs white. **N. bubalinus**, p. 149.
- b². Smaller, (head and body generally under 5 feet); black or red; legs the same colour as the body. **N. sumatrensis**, p. 150.

Nemorhædus goral.

"Bouquetin de Nepoul," *F. Cuvier, Hist. Nat. Mamm., livr. 41, with plate.*
Antilope goral, Hardwicke Linn. Trans., xiv, p. 518, pl. xiv (1823); Wagner Hugel's Kaschmir, iv, p. 578.

Antilope (Nemorhædus) goral, H. Smith, Griffith An. Kingd., iv, p. 279, (1827); Hodgson, P. Z. S., 1834, p. 85; id. J. A. S. B., iv, p. 488.

Antilope (Nemorhædus) duvaucellii, H. Smith, Griffith An. Kingd., iv, p. 279 (1827).

Kemas ghoral, Ogilby P. Z. S., p. 138 (1836).

Nemorhædus goral, Hodgson J. A. S. B., x, p. 913 (1841); Gray P. Z. S., 1850, p. 136; Horsfield Cat. E. I. Mus., p. 168; id. P. Z. S., 1856, p. 403; Adams P. Z. S., 1858, p. 523; Blyth Cat., p. 175; Jerdon Mamm., p. 285; Blanford J. A. S. B., xli, p. 40; Lydekker J. A. S. B., xlv, p. 286; Kinloch Large Game Shooting, ii, p. 21, [plate of head]; Atkinson N. W. P. Gazette, xi, p. 33.

The Goral or Himalayan Chamois; Goral or Bund-buckree of Paharias; Pijur Rein or Rom of Kashmir; Sah of the Sutlej valley; Peij of Chumba; Suhging, Lepch.; Ragiya, Bhotia.

Distribution.—The southern ranges of the Himalayas, from 4,000 feet to 10,000 feet; Pir Pinjal (Adams) to Sikkim (Blanford), Kinloch gives also the Siwaliks.

a. Skin and ♀ Mussoorie
 horns.

Miss Milman, 1873.

b. Skin and horns.	Mussoorie	Miss Milman, 1873.
c. Skin, skull ♂ and horns.	Native Sikkim	W. T. Blanford, 1870.
d. Skin and horns.	Sikkim	L. Mandelli, 1877.
e. Skin and horns.	Sikkim	L. Mandelli, 1877.
f. Skin, skull ♀ and bones.	.....	W. Rutledge, 1883.
g. Skull ♂	.....	No history.
h. Frontlet ♂	.....	B. H. Hodgson, A.S.B.
j. Frontlet ♀	.....	B. H. Hodgson, A.S.B.
k. Stuffed ♂	.....	B. H. Hodgson, A.S.B.
l. Stuffed ♀	North of Simla	F. Stoliczka.
m. Skeleton ♀ and skin.	.....	W. Rutledge, 1881.
n. Skull and horns.	♂	B. H. Hodgson, A.S.B.

Nemorhædus caudatus.

Antelope crista, *apud Schrenck Amurland Säugeth*, p. 158 (1859); *Radde Ost Siberien*, i, p. 262, pl. xii.

Antelope caudata, *A. Milne Edwards Ann. Sc. Nat.* (5), vii, p. 377 (1867); *id. Rech. Mamm.*, p. 186, pl. xxiii, xxiii-a xxiii-b.

Urotragus caudatus, *Gray Ann. Mag. N. H.* (4), viii, p. 371 (1871).

Distribution.—Amurland (Radde) and the mountains to the north of Pekin (Père David.)

a. Stuffed	North of Pekin	Paris Mus. [Ex.]
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Nemorhædus bubalinus.

Antelope bubalina, *Hodgson P. Z. S.*, p. 12 (1832).

Antelope thar, *Hodgson P. Z. S.*, p. 105 (1833); *id. ibid*, 1834, p. 86; *id. J. A. S. B.*, iv, p. 489.

Capricornis thar, *Ogilby P. Z. S.*, p. 139 (1836).

Nemorhædus proclivus, *Hodgson J. A. S. B.*, x, p. 913 (1841).

Capricornis bubalina, *Gray List Mamm. B. M.*, p. 166 (1842); *id. P. Z. S.*, 1850, p. 135; *Adams P. Z. S.*, 1858, p. 522; *Blyth Cat.*, p. 174.

Nemorhædus bubalinus, *Ferdon Mamm.*, p. 283 (1867); *Blanford J. A. S. B.*, xli, p. 40; *Kinloch Large Game Shooting*, ii, p. 18, with plate; *Anderson Anat. Zool. Res.*, p. 335.

The Serow; Thar of Nepal; Ramoo, Kashmiree; Eimu of Sutlej valley; Gya, Bhotea; Lichi, Lepcha.

Distribution.—From Kashmir all through the Himalayas to Sikkim (Blanford), also in the mountains of Upper Burma (Anderson).

a. Skin, skull and horns.	Sikkim	L. Mandelli, 1877.
b. Flat skin	Sanda valley, Yunnan	J. Anderson, 1868.

c. Flat skin	Sanda valley, Yunnan, J. Anderson. 7-1-68, 6,000 ft.	
d. Stuffed	.....	J. Biddulph.
e. Frontlet	Naini Tal, 1888.	Purchased.
f. Frontlet	Sanda valley, Yunnan, J. Anderson, 1868. 4,000 ft.	
g. Frontlet	Sanda valley, Yunnan, J. Anderson, 1868. 4,000 ft.	
h. Skull	.....	No history.

Nemorhædus sumatrensis.

- "Kambing utan," *Marsden Hist. Sumatra*, 3rd ed., p. 115, pl. xiv, fig. 1.
Antilope sumatrensis, *Shaw Genl. Zool.*, ii, pt. 2, p. 354 (1800); *Raffles Linn. Trans.*, xiii, p. 266; *Ogilby P. Z. S.*, 1836, p. 121; *Muller Over de Zoogdieren Tem., Verhandl.*, p. 45.
Antilope (Nemorhædus) sumatrensis, *H. Smith, Griffith An. Kingd.*, iv, p. 277 (1827).
Antilope interscapularis, *Lichtenstein Mag. Ges. Naturf. Freunde*, vi, p. 165 (1864).
Nemorhædus sumatrensis, *Gray List Mamm. B. M.*, p. 166 (1843); *Beavan P. Z. S.*, 1866, p. 2; *Cantor F. A. S. B.*, xv, p. 272.
Capricornis sumatrensis, *Gray P. Z. S.*, p. 135 (1850); *Blyth Cat.*, p. 174; *id. F. A. S. B.*, xlv, *Burma List*, p. 46.
Capricornis rubida, *Blyth Cat.*, p. 174 (1863).
Capricornis swinhoei, *Gray P. Z. S.*, p. 263, pl. xxxv (1862); *Swinhoe P. Z. S.*, 1862, p. 361 and 1870, p. 647.
? *Capricornis milne-edwardsii*, *David N. Arch. Mus.*, v, *bulletin*, p. 10 (1869).
Antilope (Nemorhædus) edwardsii, *Milne Edwards Rech. Mamm.*, p. 364, pls. lxxii, lxxiii (1874); *Anderson Anat. Zool. Res.*, p. 335.

Thorsek of Burmese.

Distribution.—Assam, Burma, Arakan (Blyth), Moulmein (Beavan), Tenasserim, Malay peninsula (Cantor), and Sumatra (Raffles), also Formosa (Swinhoe), if *N. edwardsii* is identical with this species, its range extends northwards to Eastern Thibet.

a. Stuffed ♀ and skull.	Shillong, Assam, 3,500ft.	C. R. Cock, 1879.
b. Skull, horns	Chittagong Hill Tracts	J. T. Jarbo, 1879.
c. Skull, horns	Chittagong Hill Tracts	J. T. Jarbo, 1879.
d. Skull, one horn.	Tenasserim	Major Berdmore, 1861, A.S.B.
e. Skull and horns.	Tenasserim	Major Berdmore, 1861, A.S.B.
f. Skull (imperfect).	Tenasserim	Major Berdmore, 1861, A.S.B.
g. Skull (no horns).	Sumatra	A.S.B.
h. Skull and horns.	.....	No history.
j. Frontlet horns.	Arakan	Sir A. Phayre, A.S.B.
k. Frontlet	.....	No history.

l. Odd horn	Rangamati, Chittagong	J. T. Jarbo, 1879.
m. Odd horn	.....	J. T. Jarbo, 1879.
n. Skull	Wellesley Province	India Mus., London.

Genus **HAPLOCEROS.**

Aploceros, *H. Smith Griffith An. Kingd.*, v, p. 354 (1827).

Haploceros, *Wagner Schreber Säugeth. Suppl.*, iv, p. 462 (1844).

Haploceros montanus.

Ovis montana, *Ord Guthrie's Geograph.*, 2nd Amer. ed., ii, pp. 293, 309 (1815)*.

Antilope (Rupicapra) americana, *Blainville Bull. Soc. Philom.*, p. 80 (1816)*.

Antilope lanigera, *H. Smith, Linn. Trans.*, xiii, p. 38 pl. iv. (1822).

Distribution.—The Rocky Mountains of North America.

a. Skull	H. A. Ward [Ex.], 1889.
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Genus **RUPICAPRA.**

Rupicapra, *Blainville Bull. Soc. Philom.*, p. 75 (1816)*.

Capella, *Keyserling and Blasius Wirbelth. Europ.*, p. 28 (1840). *Type*, *R. tragus*.

Rupicapra tragus.

Capra rupicapra, *Linnaeus Syst. Nat.*, 12th ed., i, p. 95 (1766).

Antilope (Rupicapra) rupicapra, *Blainville Bull. Soc. Philom.*, p. 75 (1816)*.

Rupicapra tragus, *Gray List Mamm. B. M.*, p. 167 (1843).

Capella rupicapra, *Blasius Säugeth. Deutsch.*, p. 488 (1857).

Distribution.—The Alps of Central Europe, the Carpathians, the Pyrenees and the Caucasus.

a. Stuffed ♂	Alps of Aosta, Italy	Prof. Giglioli, 1881.
b. Skeleton	Alps of Aosta, Italy	Prof. Giglioli, 1881.

Genus **BUDORCAS.**

Budorcas, *Hodgson F. A. S. B.*, xix, p. 65 (1850).

Only one species known.

Budorcas taxicolor.

"Takang," *Rowlatt F. A. S. B.*, xiv, p. 493.

Budorcas taxicolor, *Hodgson F. A. S. B.*, xix, p. 65, [3 plates] (1850); *Blyth F. A. S. B.*, xix, p. 348; *Gray P. Z. S.*, 1853, p. 192, pl. xxxvi; *Blyth Cat.*,

p. 174; *Anderson P. Z. S.*, 1869, p. 470; *Hume P. Z. S.*, 1887, p. 483, [woodcuts of heads ♂ and ♀].
Budorcas taxicolor var. *tibetana*, *Milne Edwards Rech. Mamm.*, p. 367, pls. lxxiv to lxxix (1874).

Takin, Mishmis of Assam frontier; Khing, Khamtees.

Distribution.—The hills at the head of the Assam valley whence it is brought down by the Mishmi tribes; it has also been got by Père David from Moupin in Eastern Thibet.

The Takin has never yet, as far as I am aware, been seen wild or shot by Anglo-Indian sportsmen, in fact the only man who has been actually in the country of the "Takin" is Père David the celebrated French Missionary.

The Takin is a generalized type exhibiting many intermediate characteristics, so that it is difficult to say whether it should be included among the sheep, oxen, antelopes or goats; Milne Edwards considers that it is rather more allied to the antelopes, and I have followed him in placing it here at the beginning of the antelopes.

Hume in his recent paper has shown that all previous writers have been mistaken with regard to the horns of the female, which are long straight and ox-like without the characteristic gnu-like twist of the male.

a. Stuffed	♂	Mishmi hills, Assam	F. Jenkins, A.S.B.
b. Stuffed	♀	.....	No history.
c. Stuffed	♂	.....	E. T. Dalton (1856), A.S.B.
head and horns.			
d. Skull	♂	.....	A. R. Comber (1863).
e. Frontlet	♂	.....	F. Jenkins, A.S.B.
f. Frontlet	♂	.....	F. Jenkins, A.S.B.
g. Frontlet	♀	.....	F. Jenkins, A.S.B.
h. Skeleton juv.		.....	Col. Graham, 1879.
i. Skin, skull, skeleton.	♀	Mishmi hills	Dy. Commissioner, 1882.
k. Skin, skull, skeleton.	♂	"Sudiya," Assam	W. Brydon, 1884.
l. Skin	♂	.....	Col. Graham, 1879.
m. Skin	juv.	.....	Col. Graham, 1879.
n. Skin	♂	"Debrogur"	Col. Graham, 1879.
o. Skin		Mishmi hills	J. Gregory, 1870.

Genus OREAS.

Oreas, *Desmarest Mamm.*, p. 471 (1822).

Oreas canna.

Antelope oryx, *Pallas Spic. Zool.*, i, p. 15 (1767).

Antelope oreas, *Pallas Spic. Zool.*, xii, pp. 5 and 17 (1777).

Antelope (*Oreas*) *canna*, *Desmarest Mamm.*, p. 471 (1822).

Damalis (*Boselaphus*) *oreas*, *H. Smith Griffith An. Kingd.*, iv, p. 355 [with plate] (1827).

Damalis (*Boselaphus*) *canna*, *H. Smith Griffith An. Kingd.*, iv, p. 357 (1827).

Boselaphus oreas, *Harris Wild Game S. Africa*, pl. vi (1840); *A. Smith S. Africa Zool.*, pls. xl and xli.

Oreas canna, *Blyth Cat.*, p. 164 (1863); *Selous P. Z. S.*, 1881, p. 749.

The Eland.

Distribution — South Africa generally; extending north to the Kilimanjaro district; now extinct in Cape Colony.

a. Frontlet	.....	W. S. Sherwill (1843), A S.B.
b. Skeleton ♂	.....	Zoological Gardens (1885).

Genus STREPSICEROS.

Strepsiceros, *H. Smith, Griffith An. Kingd.*, v, p. 365 (1827).

The Abyssinian specimens of Kudu got by Blanford seem to be examples of the Lesser Kudu of Blyth, easily distinguished from the Greater Kudu by the closed spiral of its horns.

Strepsiceros kudu.

Antelope *strepsiceros*, *Pallas Spic. Zool.*, i, p. 17 (1767).

Antelope (*Tragelaphus*), *strepsiceros*, *Desmarest Mamm.*, p. 468 (1822).

Damalis (*Strepsiceros*) *strepsiceros*, *H. Smith, Griffith An. Kingd.*, iv, p. 359 (1827).

Strepsiceros kudu, *Gray List Mamm. B. M.*, p. 155 (1843); *Blyth Cat.*, p. 165; *Selous P. Z. S.*, 1881, p. 751.

Strepsiceros capensis, *Harris Wild Game S. Africa*, pl. xx (1840); *A. Smith S. Africa Zool.*, pls. xlii, xliii.

The Kudu.

Distribution.—South Africa, but nearly extinct in Cape Colony; found in abundance between the Limpopo and Zambesi Rivers, and extending northwards as far as the Kilimanjaro district

a. Frontlet ♂	A. S. B.
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Strepsiceros imberbis.

Strepsiceros imberbis, *Blyth P. Z. S.*, p. 52 (1869); *P. L. Sclater P. Z. S.*, 1884, p. 45; pl. iv; *Phillips P. Z. S.*, 1885, p. 931.

Strepsiceros kudu, *apud Blanford Abyssinia*, p. 270 (1870).

Strepsiceros tendal, *Gray Cat. Run. Mamm. B. M.*, p. 46 (1872).

Lesser Kudu.

Distribution.—Central and Eastern Africa from Abyssinia in the north to Somaliland, and down to the Equator.

a. Stuffed, ♂	Anseba valley, Abys-	W. T. Blanford.
	sinia, 4,000 ft.	

- b. Skin, ♀ juv. Anseba valley, Abyssinia, 4,000 ft., 14.7-68. W. T. Blanford.

Genus TRAGELAPHUS.

Tragelaphus, *Blainville Bull. Soc. Philom.*, p. 75 (1816)*.

Tragelaphus sylvaticus.

Antilope sylvatica, *Sparrman Kongl. Vetensk. Akad. Handl.*, p. 197 (1780).
Tragelaphus sylvatica, *Gray List Mamm. B. M.*, p. 165 (1843); *Harris Wild Game S. Africa*, pl. xxvi, fig. 1, *Selous P. Z. S.*, 1881, p. 752.

The Bosch-bok.

Distribution.—South Africa, extending north to the Kilimanjaro district.

a-b. 2 Prs. horns South Africa W. Irving.

Genus BOSELAPHUS.

Boselaphus, *Blainville Bull. Soc. Philom.*, p. 75 (1816)*.
Portax, *H. Smith, Griffith An. Kingd.*, v, p. 366 (1827). *Type*, B. tragocamelus.

This genus contains only one species, the Nilgai, which is entirely confined to India.

Boselaphus tragocamelus.

Antilope tragocamelus, *Pallas Spic. Zool.*, i, p. 9 (1767); id. *ibid*, xii, p. 13.
Antilope albipes *Erxleben Syst. Reg. An.*, p. 280 (1777).
Antilope picta, *Pallas Spic. Zool.*, xii, p. 14 (1777); *F. Cuvier Hist. Nat. Mamm.*, livr. 46, with plate; *Sykes P. Z. S.*, 1831, p. 105.
Antilope (Boselaphus) picta, *Blainville Bull. Soc. Philom.*, p. 75 (1816)*.
Damalis (Portax) risia, *H. Smith, Griffith An. Kingd.*, iv, p. 363 (1827); *Elliot Madr. Journ.*, x, p. 226.
Tragelaphus hippelaphus, *Ogilby P. Z. S.*, p. 138 (1836).
Portax picta, *Gray List Mamm. B. M.*, p. 154 (1843); *Jerdon Mamm.*, p. 272; *McMaster Notes on Jerdon*, p. 99; *Kinloch Large Game Shooting*, ii, p. 55 [plate of head]; *Sterndale Mamm. Ind.*, p. 476.
Portax tragocamelus, *Gray P. Z. S.*, p. 146 (1850); *Adams P. Z. S.*, 1858, p. 523; *Blyth Cat.*, p. 165.

The Nilgai; Roz Rooce, Hind.; Maravi, Canarese; Gurayi, Gond; Manupotu, Telegu.

Distribution.—The peninsula of India generally; not north of Lahore (Adams), but common about Cawnpore and Umbala and southwards to the Deccan (Sykes), and to Coimbatore and Salem (Jerdon); not found in Ceylon or Lower Bengal.

a. Stuffed ♂ Barrackpore, Menagerie, (1842), A.S.B.

b.	Stuffed	♀	.....	Barrackpore, Menagerie, 1842, A.S.B.
c.	Skeleton	♂	.....	A.S.B.
	(mtd).			
d.	Stuffed	♂	.....	W. Rutledge, 1878.
	head			
e.	Skull, horns	♂	Cawnpore dist.	J. Cockburn, 1872.
f.	Skull, horns	♂	.....	A.S.B.
g.	Skull, horns	♂	.....	A.S.B.
	(castrated).			
h.	Skull	♂	.....	W. Rutledge, 1881.
j.	Skull	♂	Alwara, Jumna River	J. Cockburn, 1881.
k.	Skull	♀	Banda district	J. Cockburn, 1881.
l.	Skull	♀	.....	A.S.B.
m.	Skeleton	♀	.....	Zoological Gardens, 1880.
	and skin	juv.		
n.	Skeleton	♂	.....	Zoological Gardens, 1878.
o.	Frontlet	♂	.....	A.S.B.

Genus ORYX.

Oryx, *Blainville Bull. Soc. Philom.*, p. 75 (1816)*.

Oryx gazella.

Capra gazella, *Linnaeus Syst. Nat.*, 12th ed., i, p. 96 (1766).

Antilope bezoartica, *Pallas Spic. Zool.*, i, p. 14 (1767).

Antilope oryx, *Pallas Spic. Zool.*, xii, p. 17 (1777).

Antilope (Oryx) oryx, *Blainville Bull. Soc. Philom.*, p. 75 (1816)*.

Oryx capensis, *Ogilby P. Z. S.*, p. 139 (1836); *Harris Wild Game S. Africa*, pl. ix.

Oryx gazella, *Blyth Cat.*, p. 169 (1863); *Selous P. Z. S.*, 1881, p. 755.

The Gemsbok.

Distribution.—South Africa; principally in the deserts of the south-west, *i.e.*, Kalahari and Damara land.

a. Frontlet ♂ South Africa A.S.B.

Oryx beisa.

Antilope beisa, *Rüppell N. Wirbelth.*, p. 14, pl. v (1835).

Oryx beisa, *Gray Cat. Mamm. B.M.*, iii, p. 106 (1852); *Blanford Abyssinia*, p. 262; *P. L. Sclater P. Z. S.*, 1881, p. 625, pl. liv; *Phillips P. Z. S.*, 1885, p. 931.

Beisa Antelope.

Distribution.—North-East Africa; desert country round Suakim and Massowah and southward to Somali land (Phillips) and Kilimanjaro.

a. Stuffed ♀ nr. Massowa, Abyssinia, 8-68. W. T. Blanford.

- | | | |
|---------------------------|-------------------------------|---------------------------|
| b. Skeleton ♀ | nr. Massowa, Abyssinia, 8-68. | W. T. Blanford. |
| c. Skin, ♀ skeleton. | ..... | Zoological Gardens, 1883. |
| d. Skin, ♂ juv. skeleton. | ..... | Zoological Gardens, 1878. |

Oryx beatrix.

Oryx beatrix, Gray *P. Z. S.*, p. 158, pl. lv (1857); *P. L. Sclater P. Z. S.*, 1872, p. 603; id. *P. Z. S.*, 1878, p. 789.

Distribution.—Arabia, one specimen was got from near Mecca, the other from Bushire.

A skull identified by Blyth as *O. leucoryx* seems to be rather referable to *O. beatrix* than to *O. beisa*; the horns are quite straight, so that it is certainly not *O. leucoryx*.

- | | | |
|----------|-------|----------|
| a. Skull | | A. S. B. |
|----------|-------|----------|

Oryx leucoryx.

Antelope leucoryx, *Pallas Spic. Zool.*, xii, p. 17 (1777).

Antelope (*Oryx*) leucoryx, *Blainville Bull. Soc. Philom.*, p. 75 (1816)*.

Oryx leucoryx, *Ogilby P. Z. S.*, p. 139 (1836); *Gray Cat. Mamm. B. M.*, iii, p. 107.

White Oryx.

Distribution.—North and West Africa, Nubia, Senaar and Senegal.

- | | | |
|-----------------------|-------|--------------------|
| a. Skeleton ♀ | ..... | W. Rutledge, 1881. |
| b. Skull and ♂ horns. | ..... | W. Rutledge, 1889. |

Genus HIPPOTRAGUS.

Egoceros, *Desmarest Mamm.*, p. 475 (1822).

Aigocerus, *H. Smith, Griffith An. Kingd.*, v, p. 324 (1827).

Hippotragus, *Sundevall Kongl. Vetens. Akad. Handl.*, p. 196 (1844)*.

Hippotragus equinus.

Antelope equina, *Is. Geoff. St. Hil. N. Dict. Hist. Nat.*, ii, p. 204 (1816).

Antelope (*Aigocerus*) equina, *H. Smith, Griffith An. Kingd.*, v, p. 324 (1827); *Harris Wild Game S. Africa*, pl. xviii; *A. Smith Zool. S. Africa*, pl. xxvii; *Blyth Cat.*, p. 169.

Hippotragus equinus, *Sundevall Kongl. Vetens. Akad. Handl.*, p. 196 (1844)*; *Kohl. Ann. K. K. Nat. Hofmus.*, i, p. 85.

Hippotragus leucophaeus, *apud Selous P. Z. S.*, p. 755 (1881).

The Equine Antelope.

Distribution.—Throughout Central and South Africa; it has also been got from West Africa, but is replaced in Central Africa

by an allied species *Hippotragus bakeri* of Heuglin. (See Sclater P. Z. S., 1868, p. 214).

If *H. leucophaeus* of Pallas is considered merely as a smaller or younger specimen of *H. equinus*, the former name has many years priority and will of course stand.

a. Frontlet ♂

.....

A. S. B.

Genus GAZELLA.

Gazella, *Blainville Bull. Soc. Philom.* p. 75 (1816)*.

Antidorcas, *Sundevall Kongl. Vetensk. Akad. Handl.* (1844)*. Type, *G. euchores*.

Procapra, *Hodgson, J. A. S. B.*, xv, p. 334 (1846). Type, *G. picticaudata*.

Tragops, *Hodgson J. A. S. B.*, xvi, p. 695 (1847). Type, *G. bennetti*.

Key of the Indian Species.

a. Females horned ; horns of males not lyrate.

Gazella bennetti, p. 159.

a². Females hornless.

b. Horns lyrate, a distinct antorbital pit to the skull.

Gazella subgutturosa, p. 160.

b². Horns scimitar-shaped ; no trace of antorbital pit.

Gazella picticaudata, p. 161.

Gazella dorcas.

Capra dorcas, *Linnaeus Syst. Nat.*, 12th ed., i, p. 96 (1766).

Antilope dorcas, *Pallas Spic. Zool.*, i, p. 11 (1767).

Gazella dorcas, *Lichtenstein Mag. Ges. Naturf. Freunde*, vi, p. 168 (1812)* ; *Blyth Cat.*, p. 172 ; *Tristram P. Z. S.*, 1866, p. 86 ; *Danford and Alston P. Z. S.*, 1877, p. 276 ; *Brooke P. Z. S.*, 1873, p. 537.

Distribution.—Asia Minor near Tarsus (Danford), Syria, Egypt, and Algeria.

a. Skin, skull ♂
and horns.

.....

Zoological Gardens, 1881.

b. Skin ♂ juv. Egypt

R. A. Turnbull, 1881.

c. Skeleton ♂

No history.

d. Stuffed ♂

Rajah R. Mullick, 1872.

Gazella isabella.

Gazella isabella, *Gray Ann. Mag. N. H.*, xviii, p. 214 (1846) ; *Brooke P. Z. S.*, 1873, p. 539.

Gazella dorcas, *apud Blanford Abyssinia*, p. 261 (1870).

Distribution.—The Egyptian Soudan up to the coast at Mas-sowah.

- | | | | |
|---------------------|--------|--|-----------------|
| a. Stuffed head. | ♂ | Ain nr. Massowah,
16-8-68, 12,000 ft. | W. T. Blanford. |
| b. Stuffed head. | ♀ | Abyssinia | W. T. Blanford. |
| c. Stuffed head. | ♂ juv. | Abyssinia | W. T. Blanford. |
| d. Skull and horns. | ♀ | Komayli, Abyssinia,
20-2-68. | W. T. Blanford. |

Gazella spekii.

Gazella spekii, Blyth *J. A. S. B.*, xxiv, p. 296 (1855); id. *Cat.*, p. 172; *Blanford Abyssinia*, p. 261, pl. i, figs. 5-5a; *Brooke P. Z. S.*, 1873, p. 543; *Phillips P. Z. S.*, 1885, p. 931; *Kohl Ann. K. K. Nat. Hofmus.* i, p. 77, pls. iii and iv.

Distribution.—Somali land (Speke, Phillips and Menges).

- | | | | |
|------------------|---|-------------|---------------------------|
| a. Stuffed head. | ♂ | Somali land | J. H. Speke, 1855, A.S.B. |
| b. Stuffed head. | ♀ | Somali land | J. H. Speke, 1855, A.S.B. |

[Types of *Gazella spekii*, Blyth.]

Gazella arabica.

? *Gazella cora*, H. Smith, *Griffith An. Kingd.*, v, p. 333 (1827).

Gazella arabica, *Lichtenstein Darstell.*, pl. vi (1827); *Hempr. & Ehr. Symb. Phys.*, pl. v; *Blanford Abyssinia*, p. 261, pl. i, fig. 3; *Brooke P. Z. S.*, 1873, p. 544.

Gazella vera, *Gray Knowsley Menagerie* (1850)*.

Gazella dorcas, *apud Blyth Cat.*, p. 172 (1863).

Distribution.—South Arabia.

- | | | | |
|----------------------------|--------|-----------|---------------------------|
| a. Skin and skeleton. | ♀ | ..... | Zoological Gardens, 1878. |
| b. Skin and skeleton. | ♀ juv. | ..... | W. Rutledge, 1878. |
| c. Skin and skeleton. | ♂ juv. | ..... | Zoological Gardens, 1878. |
| d. Skin (with horns), juv. | ♂ | ..... | Purchased, 1864. |
| e. Skin and skull, juv. |  | ..... | Zoological Gardens, 1881. |
| f. Skin, | ♀ | ..... | Zoological Gardens, 1877. |
| g. Skin and skeleton. | ♂ | ..... | Zoological Gardens, 1877. |
| h. Skin and skull. | ♂ | "Bushire" | Zoological Gardens, 1882. |
| i. Skin and skeleton. | ♀ | ..... | Zoological Gardens, 1882. |
| k. Skin |  | ..... | No history. |
| l. Skull | ♂ | ..... | A.S.B. |
| m. Skull | ♂ | ..... | A.S.B. |

n. Frontlet	♂	.....	A. S. B.
o. Skull		.....	A. S. B.
p. Skull	♀	.....	A. S. B.
q. Skull	♂	.....	A. S. B.
r. Skull	♀	.....	A. S. B.
s. Skull	♀	.....	A. S. B.

Gazella bennetti.

Antilope bennettii, *Sykes P. Z. S.*, p. 104 (1831); *Blanford J. A. S. B.*, xxxvi, p. 196.

Antilope arabica, *apud Elliot Madr. Journ.*, x, p. 223 (1839).

Gazella christi, *Gray apud Blyth, J. A. S. B.*, xi, p. 452 (1842); *Hutton J. A. S. B.*, xv, p. 151.

Gazella bennetti, *Gray List Mamm. B. M.*, p. 161 (1843); *Ferdon Mamm.*, p. 280; *McMaster Notes on Ferdon*, p. 115; *Kinloch Large Game Shooting*, i, p. 57, with plate; *Stoliczka J. A. S. B.*, xli, p. 229; *Blanford P. Z. S.*, 1873, p. 315; *Brooke P. Z. S.*, 1873, p. 544; *Blanford Persia*, p. 91; *Sterndale Mamm. Ind.*, p. 463; *Murray Zool. Sind*, p. 56.

Antilope hazenna, *Is. Geoff. St. Hil. Jacquemont Voyage*, iv, p. 74, pl. vi (1844).

Tragops bennetti, *Hodgson J. A. S. B.*, xvi, p. 695 (1847); *Adams P. Z. S.*, 1858, p. 522; *Blyth Cat.*, p. 173.

The Indian Gazelle, Ravine Deer in North India; Goat Antelope in South India; Chikara, Kalpunch, Kalsipi, Hindustani; Budari, Mudari; Tiska, Canarese; Hurnee in Punjab; Ast in Beluchistan; Burudujinka, Telegu.

Distribution.—Found throughout the western parts of India in suitable localities and extending westwards through Beluchistan as far as Bushire, not found on the Malabar Coast, south of the Kistna River, in Ceylon, or in Lower Bengal.

a. Skin	♂	.....	Zoological Gardens, 1876.
b. Skin	♂	.....	Karachi Mus. [Ex.], 1879.
c. Skin and skeleton.	♀	.....	W. Rutledge, 1879.
d. Skin	♂	Bampur, Beluchistan	W. T. Blanford.
e. Skin	♀	.....	W. T. Blanford.
f. Skin	juv.	.....	Karachi Mus. [Ex.], 1879.
g. Head	♂	Sind, 17-5-75	W. T. Blanford.
		stuffed.	
h. Head	♂	Chanda, C. P.	Mus. Coll., 1867.
		stuffed.	
j. Head	♂	.....	W. T. Blanford.
		stuffed, juv.	
k. Head	♂	Pubb Hills, Sind	Karachi Mus. [Ex.], 1879.
		stuffed.	
l. Head	♂	Pubb Hills, Sind	Karachi Mus. [Ex.], 1879.
		stuffed.	
m. Head	♂	Pubb Hills, Sind	Karachi Mus. [Ex.], 1879.
		stuffed.	
n. Head	♀	Pubb Hills, Sind	Karachi Mus. [Ex.], 1879.
		stuffed.	
o. Skull	♂	Allahabad district	J. Cockburn, 1879.
p. Skull	♂	Allahabad district	J. Cockburn, 1879.

q. Skull	♂	Allahabad district	J. Cockburn, 1879.
r. Skull	♂	Allahabad district	J. Cockburn, 1879.
s. Skull	♀	Pind Dadan Khan	W. Theobald, 1853, A.S.B.
t. Frontlet	♀	Banda, N.-W. P.	J. Cockburn, 1879.
u. Skeleton	♂	.....	W. Rutledge, 1874.
v. Skeleton	♂	.....	J. F. Barckley, 1875.
w. Skeleton	♂	.....	W. Rutledge, 1875.
x. Skull	♂	.....	Zoological Gardens, 1878.
y. Skull	♀	.....	W. Rutledge, 1881.
z. Stuffed	♂	.....	Rajah R. Mullick.
a ² . Stuffed	♂	.....	Rajah R. Mullick.
b ² . Stuffed	♀	Chanda, 20-2-67	W. T. Blanford.
c ² . Skin		Deccan (Sykes)	India Museum, London.
d ² . Horns	♂	Bampur Beluchistan, 4-72.	W. T. Blanford.
e ² . Stuffed head.	♂	.....	W. Rutledge, 1878.
f ² . Stuffed head.	♂	Pubb Hills Sind	Karachi Mus., 1879.
g ² . h ² . 2 Skulls	♂	Banda, N.-W. P.	J. Cockburn, 1881.

Gazella fuscifrons.

Gazella fuscifrons, *Blanford P. Z. S.*, p. 317 (1873); *Brooke P. Z. S.*, 1873, p. 545; *Blanford Persia*, p. 92.

Distribution.—Desert of Jalk, north of Beluchistan.

Only one specimen, the one mentioned below, is known and this is a female; the species is certainly very nearly allied to *Gazella bennetti*, but pending the collection and examination of more specimens it seems better to keep it separate.

a. Skin and ♀ Jalk, Beluchistan, 3,000 ft. W. T. Blanford.
head. 13-3-72.

[Type of *Gazella fuscifrons*, Blanford.]

Gazella subgutturosa.

Antelope subgutturosa, *Guldenstadt Act. Acad. Petrop.*, ii, pt. 1, p. 251 pls. ix-xii (1780); *Pallas Zoog. Ross. As.*, i, p. 252; *Radde Zool. F. B.* iv, p. 1060.

Gazella subgutturosa, *Blainville Bull. Soc. Philom.*, p. 75 (1816)*; *Hutton, F. A. S. B.*, xv, p. 151; *Blyth Cat.*, p. 172; *Blanford P. Z. S.*, 1873, p. 313; *Brooke P. Z. S.*, 1873, p. 545; *Blanford Persia*, p. 91; *Severtzoff Ann. Mag. N. H.* (4), xviii, p. 170; *Prewalsky Peters. Mitth., Erzb.*, xii, p. 9; *Scully F. A. S. B.*, lvi, p. 76; *Thomas Linn. Trans.* (2), v, p. 64.

Gazella subgutturosa var. *yarkandensis*, *Blanford Yarkand Mamm.*, p. 88, pl. xv (1879).

The Persian Gazelle; Ahu, Persian.

Distribution.—The highlands of Persia and Afghanistan extending westward as far as Tiflis, northwards all over Russian-Turkistan, and eastwards to Yarkand; not found on the shores of the Persian Gulf being there replaced by *G. bennetti*.

a. Skin	♀	nr. Ispahan	W. T. Blanford, 1878.
b. Skin, skull	♂	nr. Ispahan, 9-70	Sir O. St. John.
c. Skin, skull	♂	Kashgar	F. Stoliczka, 1874.
d. Skin juv.	♀	Yarkand	F. Stoliczka, 1874.
e. Skin	♀	Yarkand	F. Stoliczka, 1874.
f. Skin, skull	♂	Yarkand	F. Stoliczka, 1874.
g. Skin	♂	Yarkand	F. Stoliczka, 1874.
h. Skin	♂	Yarkand	F. Stoliczka, 1874.
j. Skin	♀	Yarkand 1-75	J. Scully.
k. Skin	♀	Yarkand 1-75	J. Scully.
l. Skin	♂	.....	Zoological Gardens, 1880.
skeleton.			
m. Skull	♂	Kandahar	T. Hutton, 1846, A.S.B.
n. Frontlet	♂	Kandahar	H. B. Lumsden, 1859, A.S.B.
o. Frontlet	♂	Yarkand	J. Scully, 1889.
p. Skull	♂	Badghis, Herat	C. E. Yate, 1887.
q. Skull	♀	Yarkand, 1-75.	J. Scully.
r. Stuffed	♂	.....	Rajah R. Mullick, A.S.B.
s. Stuffed	♀	.....	Rajah R. Mullick, A.S.B.
t. Head (no horns)	♂	Yarkand	F. Stoliczka, 1874.

Gazella picticaudata.

Procapra picticaudata, Hodgson *J. A. S. B.*, xv, p. 334, pl. ii (1846); *Blyth J. A. S. B.*, xvi, p. 725; *Hooker Himalayan Journ.*, ii, p. 157; *Adams P. Z. S.*, 1858, p. 523; *Blyth Cat.*, p. 173; *Kinloch Large Game Shooting*, i, p. 10 [with plate]; *Blanford J. A. S. B.*, xli, p. 39.
Gazella picticaudata, Brooke *P. Z. S.*, p. 547 (1873).

The Tibetan Ravine Deer.; Goa of Thibetans.

Distribution.—Upper part of Ladak and Western Thibet (Kinloch). Sir J. Hooker also observed it over the Thibetan frontier to the north of Sikkim.

a. Skin and horns.	♂	.....	Purchased at Naini Tal, 1888.
b. Skull and horns.	♂	.....	F. Jenkins, 1846, A.S.B.
c. Skull, horns and skin.	♂	Kukchu nr. Ladak, 15,000 ft.	N. Elias, 1879.
d. Frontlet	♂	.....	F. Jenkins, 1846, A.S.B.
e. Frontlet	♂	.....	F. Jenkins, 1846, A.S.B.
f. Frontlet	♂	.....	No history.

Gazella søemmerringi.

Antelope søemmerringi, *Cretzschmar Ruppell's Atlas*, p. 49, pl. xix (1826).
Gazella søemmerringi, Gray *List Mamm. B. M.*, p. 161 (1843); *P. L. Sclater P. Z. S.*, 1867, p. 817, pl. xxxvii; *Blanford Abyssinia*, p. 260; *P. L. Sclater P. Z. S.*, 1871, p. 701; *Brooke P. Z. S.*, 1873, p. 549; *Phillips P. Z. S.*, 1885, p. 932.

Distribution.—North-East Africa from near Suez southward to Somali land (Phillips); always near the sea (Blanford).

- a. Skin and skull. ♂ Annesley Bay, Abyssinia, W. T. Blanford. 29-12-67.
 b. Skull, horns ♂ Annesley Bay, Abyssinia W. T. Blanford, 1868.
 c. Frontlet ♀ No history.

Gazella euchore.

Antelope euchore, *Lichtenstein Mag. Ges. Naturf. Freunde*, vi, p. 169 (1814)*.

Antelope pygarga, *Blumenbach Handb. Naturges.*, 10th ed., p. 119 (1821)*.

Gazella euchore, *Blainville Bull. Soc. Philom.*, p. 75 (1816)*; *Harris Wild Game of S. Africa.*, pl. iii; *Selous P. Z. S.*, 1881, p. 757.

Antidorcas euchore, *Gray P. Z. S.*, p. 116 (1850); *Blyth Cat.*, p. 171.

The Springbok.

Distribution.—South Africa; the north-western parts of Cape Colony, Orange Free State, Transvaal and Grimqualand west.

- a. Frontlet A.S.B.

Genus ANTILOPE [restricted].

Antelope, *Pallas Spic. Zool.*, i, p. 3 (1767).

The genus Antelope, which formerly included the whole sub-family of Antelopes, was first restricted to the following species by Ogilby *P. Z. S.*, 1836, p. 137.

Antelope cervicapra.

Antelope cervicapra, *Pallas Spic. Zool.*, i, p. 18, pls. i, ii, (1767); *Sykes P. Z. S.*, 1831, p. 104; *Gray Illustr. Ind. Zool.*, i, pls. xii, xiii; *Bennett P. Z. S.*, 1833, p. 13; id. *ibid.*, 1836, p. 34; *Elliot Madr. Journ.*, x, p. 222; *Hutton J. A. S. B.*, xv, p. 150; *Blanford J. A. S. B.*, xlv, p. 18.

Cervicapra bezoartica, *Gray List Mamm. B. M.*, p. 159 (1843).

Antelope bezoartica, *Gray P. Z. S.*, p. 117 (1850); *Adams P. Z. S.*, 1858, p. 522; *Blyth Cat.*, p. 171; *Ferdon Mamm.*, p. 275; *Blanford J. A. S. B.*, xxxvi, p. 196; *MacMaster Notes on Ferdon*, pp. 109, 210; *Kinloch Large Game Shooting*, i, p. 59 [with plate]; *Stoliczka J. A. S. B.*, xli, p. 229; *Pollok Sport in Brit. Burma*, i, p. 150; *Sterndale Mamm. Ind.*, p. 472.

The Black Buck or Indian Antelope; Mriga, Sanscrit; Kalwit Haran and Mirga ♂ Harna Harnin ♀ Hind.; Harin, Bengalee; Kalsar ♂ Baoti ♀ in Behar; Kala ♂ Guria ♀ in Tirhut; Barout or Sasin in Nepal; Bureta in Bhagulpore; Chigri, Canarese; Irri ♂ Ledi ♀ or Jinka in Telegu.

Distribution.—The whole Indian peninsula from the Punjab to Cape Comorin, except the Malabar Coast, the Eastern Ghats, and

Lower Bengal; it is most abundant in the North-West Provinces and the Deccan. It is recorded from the banks of the Manass River, a northern tributary of the Brahmaputra, in Assam by Pollok (*l. c.*)

<i>a.</i> Skull, horns ♂	Agra	J. Cockburn, 1879.
<i>b.</i> Skull, horns ♂	Banda dist.	J. Cockburn, 1881.
<i>c.</i> Skull, horns ♂	Banda dist.	J. Cockburn, 1881.
<i>d.</i> Skull, horns ♂	Banda dist.	J. Cockburn, 1881.
<i>e.</i> Skull, horns ♂	Banda dist.	J. Cockburn, 1881.
<i>f.</i> Skull, horns ♂	Allahabad dist.	J. Cockburn, 1879.
<i>g.</i> Skull, horns ♂	Banda dist.	J. Cockburn, 1881.
<i>h.</i> Skull, horns ♂	Banda dist.	J. Cockburn, 1881.
<i>j.</i> Skull, horns ♂	.....	A.S.B.
<i>k.</i> Skull, horns ♂	.....	J. J. Athanass, 1842, A.S.B.
<i>l.</i> Skull, horns ♂	.....	A.S.B.
<i>m.</i> Skull, horns ♂	.....	A.S.B.
<i>n.</i> Skull, horns ♂	.....	J. Cockburn, 1872.
<i>o.</i> Skull, horns ♂	.....	Rajah R. Mullick, 1870.
<i>p.</i> Skull, horns ♂	.....	No history.
<i>q.</i> Skull, horns ♂	.....	A.S.B.
[castrated.]		
<i>r.</i> Skull, horns ♂	.....	J. J. Athanass, A.S.B.
[one horn deformed.]		
<i>s.</i> Skull, horns ♂	.....	W. Rutledge, 1870.
[one horn deformed.]		
<i>t.</i> Skull ♀	.....	J. J. Athanass, A.S.B.
<i>u.</i> Head stuffed ♂	.....	J. Armstrong, 1869.
<i>v.</i> Head stuffed ♂	.....	A.S.B.
<i>w.</i> Frontlet, ♂	Banda horns.	J. Cockburn, 1881.
<i>z.</i> Frontlet, ♂	Doon of Assam horns.	F. Jenkins.
<i>a</i> ² . Stuffed ♂	Chanda	W. T. Blanford, 1867.
<i>b</i> ² . Stuffed ♂	.....	Purchased, 1869.
<i>c</i> ² . Stuffed juv. ♂	.....	Purchased, 1869.
<i>d</i> ² . Skeleton ♂	.....	Zoological Gardens, 1881.
<i>e</i> ² . Skull [horns ♂	.....	Mrs. Turnbull, 1837, A.S.B.
deformed]		
<i>f</i> ² . Head stuffed ♂	.....	A.S.B.

Genus PANTHOLOPS.

Pantholops, *Hodgson P. Z. S.*, p. 80 (1834).

This genus also contains only one species, the Thibetan Antelope, which has been shot just within the boundaries of the Indian Empire and which must therefore be included in the Indian Fauna.

Pantholops hodgsoni.

Antilope hodgsonii, *Abel Edin. Journ. Sci.*, p. 163 (1827)*; *Hodgson Gleanings in Science*, ii, p. 348, pls. iii and v; *id. P. Z. S.*, 1831, p. 52; *id.*

- ŷ. A. S. B.*, i, p. 59, pl. iv; *Hooker Himalayan Journ.*, ii, pp. 132, 157 and woodcut, p. 158.
 Antelope (*Oryx*) kemas, *H. Smith, Griffith An. Kingd.*, v, p. 328 (1827).
 Antelope chiru, *Lesson Man. Mamm.*, p. 371 (1827).
Pantholops hodgsoni, *Hodgson, P. Z. S.*, p. 80 (1834); id. *ŷ. A. S. B.*, iii, p. 134; id. *ŷ. A. S. B.*, x, p. 913; *Adams P. Z. S.*, 1858, p. 521; *Blanford Yarkand Mamm.*, p. 89, pl. xvi.
Kemas hodgsoni, *Gray List Mamm. B. M.*, p. 157 (1843); *Horsfield Cat. E. I. Mus.*, p. 166; *Blyth Cat.*, p. 173; *Kinloch Large Game Shooting*, i, p. 6, [with plate]; *Blanford ŷ. A. S. B.*, xli, p. 39.

Isoors or Choors of West Thibet; Chiru of East Thibet.

Distribution.—Apparently throughout Thibet; was seen by Hooker just over the pass to the north of Sikkim and has been shot by Kinloch in Changchenmo in the eastern part of Ladak.

a. Skin	♂	Kium, Ladak, 4-8-73	J. Biddulph.
b. Skin	♀	.....	F. Stoliczka, 1874.
c. Stuffed	♂	Thibet	L. Mandelli, 1877.
d. Skull, horns	♂	.....	A.S.B.
e. Skull, horns	♂	.....	A.S.B.
f. Frontlet	♂	.....	A.S.B.
g. Skull	♀	Yarkand	F. Stoliczka, 1874.

Genus **KOBUS**.

Kobus, *A. Smith S. African Zool.* (1840).

Kobus ellipsiprymnus.

- Antelope ellipsiprymnus, *Ogilby, P. Z. S.*, p. 47 (1833)*.
Kobus ellipsiprymnus, *A. Smith S. African Zool.*, pls. xxviii and xxix (1840);
Harris Wild Sports S. Africa, pl. xiv; *Selous P. Z. S.*, 1881, p. 758.

The Water Buck.

Distribution.—South Africa, principally found about the Zambesi and Limpopo Rivers, and extending northwards to the Kilimanjaro district.

a Skeleton	♂	E. S. Gerrard [P.], 1881.
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Genus **CERVICAPRA**.

- Cervicapra*, *Blainville Bull. Soc., Philom.*, p. 75 (1816)*.
Redunca, *H. Smith, Griffith An. Kingd.*, v, p. 337 (1827) [as a sub-genus].

Cervicapra arundinacea.

- Antelope arundinacea, *Shaw Genl. Zool.*, ii, pt. 2, p. 347 (1801).
 Antelope (*Cervicapra*) eleotragus, *Blainville Bull. Soc., Philom.*, p. 75 (1816).

Antilope (Redunca) eleotragus, *H. Smith, Griffith An. Kingd.*, iv, p. 237 (1827).

Eleotragus reduncus, *Gray List. Mamm. B. M.*, p. 165 (1843).

Eleotragus arundinaceus, *Gray Cat. Mamm. B. M.*, iii, p. 91 (1852).

The Rietbok.

Distribution.—Central South Africa, especially about the tributaries of the Zambesi and Limpopo Rivers.

a. Frontlet

.....

No history.

Genus NEOTRAGUS.

Neotragus, *H. Smith, Griffith An. Kingd.*, v, p. 349 (1827).

Neotragus saltianus.

Antilope (Cervicapra) saltiana, *Blainville Bull. Soc., Philom.*, p. 75 (1816)*.

Antilope saltiana, *Cretzschmar Rüppell's Atlas*, p. 55, pl. xxi (1826).

Antilope (Neotragus) mandoka, *H. Smith, Griffith An. Kingd.*, iv, p. 271 (1827).

Antilope hemprichiana, *Hempr. and Ehr. Symb. Phys.*, pl. vii (1828).

Mandoqua saltiana, *Gray List Mamm. B. M.*, p. 164 (1842).

Neotragus saltiana, *Gray Cat. Mamm. B. M.*, iii, p. 76 (1882); *Blanford Abyssinia*, p. 268; *Gunther P. Z. S.*, 1880, p. 19 [figs. of skull].

The Beni Israel.

Distribution.—Shores of the Red Sea, in the neighbourhood of Abyssinia; replaced by allied species in Somaliland and Damara-land.

a. Skin	♂	Anseba valley, Abyssinia, 4,000 ft., 27-7-68.	W. T. Blanford.
b. Skin	♂	Anseba valley, Abyssinia, 4,000 ft., 2-8-68.	W. T. Blanford.
c. Skin	♂	Anseba valley, Abyssinia, 4,000 ft., 5-8-68.	W. T. Blanford.
d. Skin	♂	Anseba valley, Abyssinia, 4,000 ft., 15-7-68.	W. T. Blanford.
e. Skin	♂	Abyssinia	W. T. Blanford.
f. Skin	♀	Anseba valley, 4 000 ft., 29-7-68.	W. T. Blanford.
g. Skin	♀	Anseba valley, 4,000 ft., 25-7-68.	W. T. Blanford.
h. Skin	♀	Suru, Abyssinia, 2,500 ft., 17-2-68.	W. T. Blanford.
j. Skin	♀	Samhar, Abyssinia, 700 ft., 28-6-68.	W. T. Blanford.
k. Skin	♀	Koomeyloo, Abyssinia, 300 ft., 1-68.	W. T. Blanford.
l. Head	♂	Anseba valley.	W. T. Blanford, 1868.
m. Stuffed head	♂	Anseba valley.	W. T. Blanford, 1868.
n. Stuffed head	♀	Anseba valley.	W. T. Blanford, 1868.
o. Skeleton		Anseba valley.	W. T. Blanford, 1868.

Neotragus kirki.

Neotragus saltiana, *apud Blyth Cat.*, p. 168 (1863).

Neotragus kirkii, *Günther P. Z. S.*, p. 17, figs. 1-10 (1880).

Distribution.—Somaliland, extending southwards to the Kilimanjaro country.

a. Stuffed ♂ Somaliland J. H. Speke, 1855, A. S. B.

Genus NANOTRAGUS.

Nanotragus, *Sundevall Kongl. Vetensk. Akad. Handl.*, p. 191 (1844)*. *Type*, *N. spiniger*.

Calotragus, *Sundevall Kongl. Vetensk. Akad. Handl.*, p. 192 (1846)*. *Type*, *N. tragulus*.

Scopophorus, *Gray Ann. Mag. N. H.*, xviii, p. 232 (1846). *Type*, *N. scoparia*.

Nesotragus, *Von Düben Kongl. Vetensk. Akad. Öfvers.*, p. 221 (1846)*. *Type*, *N. moschatus*.

Oreotragus, *Gray Ann. Mag. N. H.*, xviii, p. 231 (1846). *Type*, *N. saltatrix*.

Nanotragus tragulus.

Antilope campestris, *Thunberg Mem. Ac. St. Petersb.*, iii, p. 313 (1811).

Antilope (*Gazella*) *tragulus*, *Lichtenstein Mag. Ges. naturf. Freunde*, vi, p. 176 (1814)*.

Antilope (*Cervicapra*) *stenbock*, *Blainville Bull. Soc. Philom.*, p. 75 (1816)*.

Antilope (*Tragulus*) *rupestris*, *H. Smith, Griffith An. Kingd*, iv, p. 248 (1827); *Harris Wild Game of S. Africa*, pl. xxv, fig. 2.

Calotragus tragulus, *Sundevall Kongl. Vetensk. Akad. Handl.*, p. 192 (1846)*; *Blyth Cat.*, p. 166.

Pediotragus campestris, *Gray Cat. Rum. B. M.*, p. 31 (1872).

Nanotragus tragulus, *Brooke P. Z. S.*, p. 642 (1872); *Selous P. Z. S.*, 1881, p. 762.

The Steinbock.

Distribution.—All over South Africa from the Cape to the Zambesi, extending northward to the Kilimanjaro district.

a. Skin ♂ South Africa E. L. Layard (1860), A. S. B.

Nanotragus montanus.

Antilope montana, *Cretzschmar Rüppell's Atlas*, p. 11, pl. iii (1826).

Scopophorus montanus, *Gray Ann. Mag. N. H.*, xviii, p. 232 (1846); *Blanford Abyssinia*, p. 266.

Nanotragus montanus, *Brooke P. Z. S.*, p. 632 (1872).

Distribution.—Eastern Africa, Abyssinia, West Africa?

a. Skin Dolo, Abyssinia, 7,500 ft., W. T. Blanford.
27-3-68.

Nanotragus melanotis.

- Antilope melanotis, *Thunberg Mem. Acad. St. Petersb.*, iii, p. 312 (1811).
 Antilope grisea, *F. Cuvier Dict. Sci. Nat.*, ii, p. 244 (1816).
 Antilope (Cervicapra) grisea, *Blainville Bull. Soc. Philom.*, p. 75 (1816).
 Antilope (Tragulus) grisea, *H. Smith, Griffith An. Kingd.*, iv, p. 250 (1827).
 Oreotragus griseus, *Gray List Mamm. B. M.*, p. 164 (1842).
 Calotragus melanotis, *Gray Cat. Mamm. B. M.*, iii, p. 72 (1852); *Blyth Cat.*, p. 166.
 Nanotragus melanotis, *Brooke P. Z. S.*, p. 642 (1872); *Selous P. Z. S.*, 1881, p. 762.

The Grysbok.

Distribution.—Central South Africa, north of the Limpopo River.

a. Stuffed ♂ South Africa E. L. Layard (1860), A.S.B.

Nanotragus oreotragus.

- Antilope oreotragus, *Gmelin Syst. Nat.*, i, p. 189 (1778).
 Antilope saltatrix, *Boddaert Elench. Anim.*, p. 141 (1785)*.
 Antilope (Tragulus) oreotragus, *H. Smith, Griffith An. Kingd.*, iv, p. 245 (1827).
 Oreotragus saltatrix, *Harris Wild Game S. Africa*, pl. xxiv, fig. 2 (1840); *Gray Ann. Mag. N. H.*, xviii, p. 231; *Blyth Cat.*, p. 167; *Blanford Abyssinia*, p. 265.
 Nanotragus oreotragus, *Brooke P. Z. S.*, p. 642 (1872); *Selous P. Z. S.*, 1881, p. 762.

The Klipspringer.

Distribution.—East and South Africa from Abyssinia in the north to Cape in the south, wherever there are stony hills.

- a. Stuffed ♂ South Africa E. L. Layard (1860), A.S.B.
 b. Stuffed head ♂ Senafe Tigré, Abyssinia, 6-68. W. T. Blanford.
 c. Stuffed head ♂ Somaliland J. H. Speke, 1855, A. S. B.
 d. Skin ♂ Senafe Tigré, Abyssinia, 7,500 ft., 11-3-69. W. T. Blanford.

Genus CEPHALOPHUS.

Cephalophorus, *H. Smith, Griffith An. King.*, v, p. 344 (1827); [as a subgenus];
Grimmia, Gray Cat. Rum. Mamm. B. M., p. 22 (1872).

Cephalophus mergens.

- Antilope mergens, *Blainville N. Dict. d'Hist. Nat.*, ii, p. 193 (1816).
 Antilope (Cephalophus) mergens, *H. Smith, Griffith An. King.* iv, p. 264 (1827); *Harris Wild Game S. Africa*, pl. xv, fig. 2.

Cephalophus grimmia, *apud Gray Cat. Mamm. B. M.*, iii, p. 78 (1852); *id. P. Z. S.*, 1857, p. 277, pl. lvii; *Blyth Cat.*, p. 167.
Grimmia nictitans, *Gray Cat. Rum. Mamm. B. M.*, p. 22 (1872).

The Duiker.

Distribution.—South Africa extending northwards to the Kilimanjaro district.

a. Stuffed ♂ South Africa E. L. Layard (1860), A. S. B.

Cephalophus natalensis.

Antilope natalensis, *A. Smith S. African Quart. Journ.*, p. 217 (1830)*; *id. S. African Zool.*, pl. xxxii.

Cephalophus natalensis, *Gray Ann. Mag. N. H.*, xviii, p. 166 (1846); *Blyth Cat.*, p. 168.

Rhoodebok.

Distribution.—South Africa, more especially Natal.

a. Stuffed ♂ A. Malherbe (1859), A. S. B.

Cephalophus madoqua.

Antilope madoqua, *Rüppell N. Wirbelth.*, p. 22, pl. vii, fig. 2 (1835).

Cephalophus madoqua, *Gray Cat. Mamm. B. M.*, iii, p. 82; *Blanford Abyssinia*, p. 267.

Grimmia madoqua, *Gray Cat. Rum. Mamm. B. M.*, p. 24 (1872).

Distribution.—Eastern Africa, Abyssinia.

a. Skin ♂ Dildi, Abyssinia, 7,000 W. T. Blanford.
ft., 23-4-68.

b. Skin ♂ Dongolo, Abyssinia, 6,500 W. T. Blanford.
ft., 17-5-68.

Genus TETRACERUS.

Tetracerus, *Leach cf. Linn. Trans.*, xiv, p. 524 (1823).

This genus contains one species only and is entirely confined to India.

Tetracerus quadricornis.

Antilope (Cervicapra) quadricornis, *Blainville Bull. Soc. Philom.*, p. 75 (1816)*; *id. Isis*, 1819, pt. 2, p. 1095, pl. xii, fig. 3.

Tetracerus striaticornis, *F. Cuvier Hist. Nat. Mamm. livr.* 44 (1824).

Antilope chickara, *Hardwicke Linn. Trans.*, xiv, p. 520, pls. xv, xvi (1825); *Hills Linn. Trans.*, xv, p. 501, pl. xx; *Hodgson J. A. S. B.*, i, p. 346; *id. P. Z. S.*, 1834, p. 99.

Antilope sub-4-cornutus, *Elliot Madr. Journ.*, x, p. 225, pl. x, fig. 2 (1839); *Sclater P. Z. S.*, 1875, p. 527.

Tetracerus chickara, *Hodgson J. A. S. B.*, x, p. 913 (1841).

Tetracerus quadricornis, *Gray List Mamm. B. M.*, p. 159 (1843); *Blyth J. A.*

S. B., xvi, pt. ii, p. 879; *id. J. A. S. B.*, xvii, pt. i, p. 561; *Adams P. Z. S.*, 1858, p. 522; *Blyth Cat.*, p. 165; *Ferdon Mamm.* p. 274; *McMaster Notes on Ferdon*, p. 103; *Blanford J. A. S. B.*, xxxvi., p. 196; *Kinloch Large Game Shooting*, ii, p. 54 with plate. *Murray Zool. Sind*, p. 55. *Tetracerus iodes* and *paccerois*, *Hodgson Calc. Journ N. H.*, viii, p. 90 (1847).

The four-horned Antelope; Chouka, Chousinga, Hind.; Benkara or Bekra of Mahrattas; Kondguri, Canarese; Kondagori, Telegu.

Distribution.—India generally, more especially in the Central Provinces; is not found in the Ganges valley itself, but to the north in the terai is fairly common, it doubtfully extends into the Punjab and Sind, and does not occur in Ceylon.

a. Skin and skull	♀	Raneegunge	Babu Rameshur Mullick, 1872.
b. Skin and skull	♂	Raneegunge	Babu Rameshur Mullick, 1872.
c. Skin and skelet.	♂	.....	Zoological Gardens, 1878.
d. Skeleton skin	♂	.....	Zoological Gardens, 1882.
e. Skeleton	♂	.....	Zoological Gardens, 1880.
f. Stuffed	♂	.....	Rajah R. Mullick, A. S. B.
g. Stuffed	♀	.....	Rajah R. Mullick, A. S. B.
h. Stuffed	juv	.....	W. Rutledge, 1873.
j. Stuffed head	♂	Asirgarh, C. P., 7-66.	W. T. Blanford.
k. Stuffed head	♂	Asirgarh, C. P., 7-66.	W. T. Blanford.
l. Skull	♂	.....	A. S. B.
m. Skull	♂	.....	A. S. B.
n. Skull	♂	.....	A. S. B.
o. Skull	♂	.....	A. S. B.
p. Skull	♂	South India	Sir W. Elliot, 1845, A. S. B.
q. Skull	♀	South India	Sir W. Elliot, 1845, A. S. B.
r. Skull	♀	South India	Sir W. Elliot, 1845, A. S. B.
s. Skull	♂	.....	J. Cockburn, 1886.
t-u. 2 Skulls	♂	.....	J. Cockburn [P.], 1886.

Genus ÆPYCEROS.

Æpyceros, *Sundevall Kongl. Vetensk. Akad. Handl.*, p. 271 (1845)*.

Æpyceros melampus.

Antilope melampus, *Lichtenstein Mag. Ges. naturf. Freunde*, vi, p. 167 (1814)*; *Harris Wild Game S. Africa*, pl. xv.

Æpyceros melampus, *Sundevall Kongl. Vetensk. Akad. Handl.*, p. 271 (1845)*; *Blyth Cat.*, p. 171; *Selous P. Z. S.*, 1881, p. 757.

The Mpallah or Roodebok.

Distribution.—Central South Africa, especially about the Upper Waters of the Limpopo River, extending northwards to the Kili-manjaro district.

a. Frontlet	Purchased (1861), A. S. B.
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Genus **ALCEPHALUS.**

Alcephalus, *Blainville Bull. Soc. Philom.*, p. 75 (1816)*.

Alcephalus caama.

Antilope caama, *F. Cuvier Dict. Sci. Nat.*, ii, p. 242 (1816).

Antilope (Alcephalus) caama, *Blainville Bull. Soc. Philom.*, p. 75 (1816)*; *Selous P. Z. S.*, 1881, p. 763.

Damalis (Acronotus) caama, *H. Smith, Griffith Ann. Kingd.*, iv, p. 348, with plate (1827); *Harris Wild Game S. Africa*, pl. vii.

Boselaphus caama, *Gray Ann. Mag. N. H.*, xviii, p. 233 (1846); *Blyth Cat.*, p. 170.

Bubalus caama, *A. Smith Zool. S. Africa*, pl. xxx (1849).

The Hartebeest.

Distribution.—South Africa; Grimqualand and the Kalahari Desert.

<i>a.</i> Frontlet	.....	W. S. Sherwill (1843), A.S.B.
<i>b.</i> Skeleton, ♀ juv skin.	.....	Zoological Gardens, 1881.

Genus **CONNOCHAETES.**

Connochaetes, *Lichtenstein Mag. Ges. naturf. Freunde*, vi, p. 165 (1814)*.

Catoblepas, *H. Smith, Griffith An. Kingd.*, v, p. 367 (1827).

Connochaetes gnu.

Antilope gnu, *Gmelin Syst. Nat.*, i, p. 189 (1788).

Antilope (Connochaetes) gnu, *Lichtenstein Mag. Ges. naturf. Freunde*, vi, p. 165 (1814)*.

Antilope (Boselaphus) gnu, *Blainville Bull. Soc. Philom.*, p. 75 (1816)*.

Catoblepas gnu, *H. Smith, Griffith An. Kingd.*, iv, p. 367 (1827); *Harris Wild Game S. Africa*, pl. i.

The White-tailed Gnu.

Distribution.—South Africa, extending northwards to the Kilimanjaro district.

<i>a.</i> Frontlet	.....	No history.
<i>b.</i> Skeleton ♀ juv	.....	Berlin Mus. [Ex.] 1878.
<i>c.</i> Skeleton and skin ♂	.....	Babu H. M. Roy, 1885.

Genus **ANTILOCAPRA.**

Antilocapra *Ord Journal de Physique*, lxxxvii, p. 149 (1818)*; *id. Isis*, 1819, p. 1106.

Dicranoceros, *H. Smith, Griffith An. Kingd.*, v, 322 (1827).

Antilocapra americana.

Antilope americana, *Ord Guthrie's Geography* 2nd Amer. ed., ii, pp. 292, 308 (1815)*.

Antilocapra americana, *Ord Journal de Physique*, lxxxvii, p. 149 (1818)*;
P. L. Slater P. Z. S., 1865, p. 60, pl. iii; *Bartlett P. Z. S.*, 1865, p. 718;
Murie P. Z. S., 1870, p. 334; *Forbes P. Z. S.*, 1880, p. 540;

Antilope furcifer, *H. Smith Linn. Trans.*, xiii, p. 28, pl. ii (1822).

Antilope (*Dicranoceros*) *furcifer*, *H. Smith, Griffith An. Kingd.*, iv, p. 170 (1827).

The Prong Buck.

Distribution.—North America, west of the Missouri from the Saskatchewan southwards to Northern Mexico.

a. Stuffed	♂	North America	H. A. Ward [Ex.], 1879.
b. Skeleton	♂	North America	Brit. Mus. [Ex.], 1878.
c. Skeleton		.....	W. Jamrach [P.], 1876.
d. Skin		Montana, N America	...

Genus GIRAFFA.

Giraffa, *Zimmermann Geogr. Geschichte*, ii, p. 125 (1780).

Camelopardalis, *Gmelin Syst. Nat.*, i, p. 181 (1788).

Giraffa camelopardalis.

Cervus camelopardalis, *Linnaeus Syst. Nat.*, 12th ed., i, p. 92 (1766).

Giraffa camelopardalis *Zimmermann Geogr. Geschichte*, ii, p. 125 (1780);
Gray Cat. Mam. B. M., iii, p. 181.

Camelopardalis giraffa, *Gmelin Syst. Nat.*, i, p. 181 (1788); *Blyth Cat.*, p. 144.

Camelopardalis aethiopicus, et. *C. capensis* *Ogilby, P. Z. S.*, p. 134 (1836).

Distribution.—Africa south of the Atlas.

a. Skeleton mtd.	♂	.....	Lord Canning, 1862.
b. Skull		.....	No history.
c. Skin	♂	.....	W. Rutledge, 1881.
d. Skin, skeleton	♂	.....	Zoological Gardens, 1879.
e. Skin, skeleton	♂	.....	Babu H. M. Roy, 1883.
	juv.		
f. Skeleton	♀	.....	Babu H. M. Roy, 1886.
g. Skeleton	♂	.....	Zoological Gardens, 1887.

Genus MOSCHUS.

Moschus, *Linnaeus Syst. Nat.*, 12th ed., i, p. 91 (1766).

The genus *Moschus* is now generally allowed to consist of a single species only, though others have been from time to time described on mere colour variations and on other insufficient grounds.

Moschus moschiferus.

Moschus moschiferus, *Linnaeus Syst. Nat.*, 12th ed., i, p. 91 (1766); *Hodgson Gleanings in Science*, iii, p. 320, pl. xxi; *Pallas Zoog. Ross. As.*, p. 198; *Walker Calc. Journ. N. H.*, iii, p. 267.; *Wagner Hugel's Kaschmir*, iv, p. 576; *Middendorf Siberische Reise.*, p. 118; *Adams P. Z. S.*, 1858, p. 528; *Schrenck Amurland*, p. 161; *Radde Ost Siberien*, p. 274; *Blyth Cat.*, p. 157; *Milne Edwards Ann. Sci. Nat.* (5), ii, p. 154, pl. iv, fig. 1; *Ferdon Mamm.*, p. 266; *Kinloch Large Game Shooting*, i, p. 41 [with plate of head]; *Milne Edwards Rech. Mamm.*, p. 176, pls. xix, xx; *Blanford J. A. S. B.*, xli, p. 39; *Flower P. Z. S.*, 1875, p. 159; *Lydekker J. A. S. B.*, xlv, p. 286; *id. J. A. S. B.*, xlix, p. 4; *Scully P. Z. S.*, 1881, p. 209.

Moschus sibiricus, *Pallas Spic. Zool.*, xiii, p. 29, pls. iv, v, vi, (1779).

Moschus altaicus, *Eschscholtz Isis.*, p. 606 (1830).

Moschus chrysogaster

Moschus leucogaster } *Hodgson J. A. S. B.*, viii, p. 203 (1839); *id. J. A.*

Moschus saturatus

S. B., xi, p. 285.

The Musk Deer; Kusturee or Russ, Kashmiri; Kastura, Hind; La or Lawa, Tibetan; Ribjo in Ladak; Bena in Kunawar; Gan Pahoo, Assamese.

Distribution.—Eastern Central Asia, from Amurland (Schrenck) and Transbaikalia and even further north, through Mongolia and Thibet to the Himalayas; in the latter is found from Gilgit to Bhootan at considerable elevations; Milne Edwards also gives the mountains of Cochin-China as a locality for the species.

a. Skin	♀	Sikkim	L. Mandelli, 1877.
b. Skin	♀	Basalgah, Gilgit, 7-79	J. Scully, 1888.
c. Skin		.....	No history, A. S. B.
d. Skin	♂	Ladak	J. Biddulph, 1877.
e. Skin	♂	.....	Sir W. W. Hunter, 1886.
f. Skin	♂	Ladak	J. Biddulph, 1877.
g. Skin	juv.	Basalgah, Gilgit, 7-79	J. Scully, 1888.
h. Skin	juv.	Sikkim	L. Mandelli, 1877.
j. Skin	juv.	Yarkand	J. Armstrong.
k. Skin	juv.	.....	No history.
l. Skeleton	♂	.....	W. Rutledge, 1874.
	juv.		
m. Stuffed	♂	North of Simla	F. Stoliczka [Ex.], 1869.
n. Skeleton,		.....	No history.
mtd.			
o. Skull	♂	Gilgit	J. Scully (1888).
p. Skull	♂	.....	G. T. Lushington (1849), A. S. B.
q-s. 3 Skulls	♂ ♂ ♀	.....	A. S. B.

Genus CERVULUS.

Cervulus, *Blainville Bull. Soc. Philom.*, p. 77 (1816)*.

Stylocerus, *H. Smith, Griffith An. Kingd.*, v., p. 319 (1827).

Prox, *Ogilby P. Z. S.*, p. 135 (1836). *Type*, *C. muntjac*

Muntjac, *Blyth J. A. S. B.*, xx, p. 174 (1851).

The genus *Cervulus* is confined to the Indian and the south-eastern parts of the Palearctic regions. Besides the species mentioned below, there exists *C. sclateri* (= *C. lacrimans*) and *C. crinifrons*, both from China.

The Indian form of *Cervulus muntjac* was at one time thought to differ specifically from the Sumatra and Javan form, and the point does not yet seem to be quite satisfactorily decided. I have, however, followed Sir V. Brooke (*P. Z. S.*, 1874, p. 33) in uniting the two forms under the name of *C. muntjac*.

Cervulus muntjac.

Cervus muntjak, *Zimmerman Geog. Geschichte*, ii, p. 131 (1780); *Raffles Linn. Trans.*, xiii, p. 265; *Sykes P. Z. S.*, 1831, p. 104; *Elliot Madr. Journ.*, x, p. 221; *Cantor J. A. S. B.*, xv, p. 269; *Walker Calc. Journ. N. H.*, iii, p. 267; *Fentink Notes Leyd. Mus.*, xi, p. 25.

Cervus vaginalis, *Boddaert Elench. Anim.*, i, p. 136 (1785)*.

Cervulus moschatus, *Blainville Bull. Soc. Philom.*, p. 77 (1816)*.

Cervus (Styllocerus) aureus, *H. Smith, Griffith Ann. Kingd.*, iv, p. 148 (1827).

Cervus ratwa, *Hodgson As. Res.*, xviii, pt. 2, p. 139, with plate (1829); *id. J. A. S. B.*, x, p. 914; *Wagner Hugel's Kaschmir*, iv, p. 578.

Prox moschatus, *Ogilby P. Z. S.*, p. 135 (1836).

Cervus melas, *Ogilby Royle Himal. Bot.*, p. lxxiii (1839).

Muntjacus vaginalis, *Blyth J. A. S. B.*, xx, p. 174 (1851).

Styllocerus muntjacus, *Kelaart Prodr. Faun. Zeylan.*, p. 85 (1852).

Cervulus vaginalis, *Adams P. Z. S.*, p. 530 (1858); *Blyth Cat.*, p. 154; *Swinhoe P. Z. S.*, 1869, p. 652.

Cervulus aureus, *Ferdon Mamm.*, p. 264; *McMaster Notes on Ferdon*, p. 94; *Blyth J. A. S. B.*, xlv, *Burma List*, p. 46; *Kinloch Large Game Shooting*, ii, p. 25 [plate of head].

Cervulus muntjac, *Brooke P. Z. S.*, p. 38 (1874); *P. L. Sclater P. Z. S.*, 1875, p. 421; *Anderson Anat. Zool. Res.*, p. 337.

The Kakur, Barking Deer or Rib-faced Deer of North India; the Jungle sheep of South India; and the Red Hog Deer of Ceylon; Kakur, Hind.; Maya, Bengalee; Ratwa of Nepaulese; Bekra, Mahratti; Kankuri, Canarese; Jungli bukra of South India Musalman; Karsiar of Bhooteas; Sikku of Lepchas; Gutra of Gonds; Kuka gori, Telegu; Welly or Hoola Morha of Singalese; Hoogeree of Assam; Gee of Burma.

Distribution.—The Kakur is found all over India, Burma, Indo-China, the Malay peninsula and the Islands of Sumatra, Java, Banka, Borneo and Hainan (Swinhoe). In India proper it is found from Kashmir (Hugel) in the north to Ceylon (Kelaart) on the south; it is replaced in Eastern Thibet and South China by the next species and by *C. sclateri*.

a. Skin (flat) India Mus., London, 1880.

b. Skin (flat) ♂ Nepal (Hodgson) India Mus., London, 1880.

c. Skin (flat) Sanda Valley, Yunnan, J. Anderson.
7-68.

d. Skin (flat) Sanda Valley, Yunnan, J. Anderson.
7-68.

e. Skin (flat)		Sanda Valley, Yunnan, J. Anderson.	
		7-68.	
f. Shin (flat) juv.		Sanda Valley, Yunnan, J. Anderson.	
		7-68.	
g. Skin (flat) juv.		Sanda Valley, Yunnan, J. Anderson.	
		7-68.	
h. Skin	♂	Ceylon	Columbo Museum, 1888.
i. Skin, skelet.	♀	.....	Rajah R. Mullick, 1877.
k. Skin	♀ juv.	.....	Zoological Gardens, 1878.
l. Skin	♂ juv.	.....	Zoological Gardens, 1880.
m. Skull	♂	.....	A.S.B.
n. Skull	♂	.....	P. Homfray (1843), A.S.B.
o. Skull	♂	Dibrugahr, Assam	Purchased, 1879.
p. Skull and skin of head.	♂	Shevaroy Hills, Madr.	Mrs. W. King, 1888.
q. Skull	♂	.....	A.S.B.
r. Skull	♂	.....	A.S.B.
s. Skull	♂	Nepal	B. H. Hodgson, 1844, A.S.B.
t. Skull, skelet.	♂	.....	Rajah R. Mullick, A.S.B.
u. Skull	♀	.....	A.S.B.
v. Frontlet	♂	Sanda Valley, 7-68	J. Anderson.
w. Frontlet	♂	Sanda Valley, 7-68	J. Anderson.
x. Frontlet	♂	.....	A. Masters, 1842, A.S.B.
y. Frontlet	♂	Arakan	Sir A. Phayre, 1846, A.S.B.
z. Frontlet	♂	Arakan	Sir A. Phayre, 1846, A.S.B.
a ¹ . Stuffed	♂	.....	Zoological Gardens, 1877.
b ² . Skeleton mtd.	♂	.....	No history.
c ² . Flat skin		.....	India Mus., London, 1880.
d ² . Skeleton	♂ juv.	.....	Zoological Gardens, 1880.

Cervulus reevesi.

Cervulus reevesi, *Ogilby P. Z. S.*, p. 105 (1838); *Blyth J. A. S. B.*, xxix, p. 93; *Swinhoe P. Z. S.*, 1862, p. 361; *Blyth Cat.*, p. 155; *Swinhoe P. Z. S.*, 1870, p. 644; *Brooke P. Z. S.*, 1874, p. 41, pl. ix; *Sclater P. Z. S.*, 1875, p. 422, pl. li, fig. 2.

Cervulus micrurus, *Sclater P. Z. S.*, p. 421, pl. li (1875).

Distribution.—Southern China from Canton northwards to Ningpo and Formosa.

a. Skin skull	♂	.....	Zoological Gardens, 1879.
b. Skull	♂	Formosa.	R. Swinhoe, 1860.

Genus CERVUS.

Cervus, *Linnaeus Syst. Nat.*, 12th ed., i, p. 92 (1766).

Dama, *H. Smith, Griffith An. Kingd.*, v, p. 306 (1827) [as a sub-genus].
Type, *C. dama*.

Rusa, *H. Smith, Griffith An. Kingd.*, v, p. 309 (1827) [as a sub-genus].
Type, *C. aristotelis*.

Axis, *H. Smith, Griffith An. Kingd.*, v, p. 312 (1827) [as a sub-genus].
Type, *C. axis*.

Recurvus, *Hodgson Ann. Mag. N. H.*, i, p. 154 (1838). Type, *C. duvaucelli*.

Panolia, *Gray List Mamm. B. M.*, p. 180 (1843). *Type*, *C. eldi*.

Hyelaphus, *Sunderall Kongl. Vetens. Akad. Handl.*, p. 180 (1844)*. *Type*, *C. porcinus*.

An excellent account of the genus *Cervus*, which has been followed in the catalogue below, will be found in the Proceedings of the Zoological Society for 1878, by Sir Victor Brooke.

Key of the Indian Species.

- a.* With only one brow antler; rhinarium extensive, completely surrounding the nostrils, the upper margin being slightly concave.
- b.* Brow antler forms an acute angle with the beam which bifurcates to form two strong tines only.
[=sub-genus *Rusa*.]
- c.* Of large size, from 4 to 5 ft. high at the shoulder.
C. aristotelis, p. 176.
- c*². Of small size, about 2 ft. to 2 ft. 6 in. at the shoulder; the outer tine always surpasses the inner tine in length.
C. porcinus, p. 178.
- b*². Brow antler at right angles to the beam sometimes forked and sometimes developing supplemental tines; adults unspotted. . . . [=sub-genus *Recurvus*.]
- d.* Beam bifurcates very early within a few inches of the basal tine and forms a crown of very long tines far surpassing the undivided beam in length.
C. schomburgki, p. 180.
- d*². Undivided beam much longer, so that the crown is formed of short tines which are much shorter than the undivided beam. . . . ***C. duvauceli***, p. 179.
- b*³. Brow antler forms with the beam a continuous curve; a supplemental tine frequently developed at the junction of the beam and brow antler; adults unspotted [=sub-genus *Recurvus*, pt.] . . . ***C. eldi***, p. 180.
- b*⁴. Brow antler at right angles to the beam, which forms two tines only above; adults constantly spotted. . . .
C. axis, p. 181.
- a*². With two brow antlers; rhinarium not extensive, the infranarial portion completely absent, and the prenarial portion much constricted. [=sub-genus *Elaphus*.]
- c.* The two brow antlers of approximately the same length. . . . ***C. affinis***, p. 184.

^{e2} The second brow antler considerably exceeds the first in length. . **C. cashmerianus**, p. 184.

Cervus aristotelis.

- Cervus aristotelis*, *G. Cuvier Oss. foss.*, 2nd ed., iv, p. 503 (1823)*; *Walker Calc. Journ. N. H.*, iii, p. 267; *Blyth J. A. S. B.*, xi, p. 449; *Brooke P. Z. S.*, 1878, p. 901; *Pollok Sport in Brit. Burma.*, i, p. 139.
- Cervus leschenaultii*, *G. Cuvier Oss. foss.*, 2nd ed., iv (1823)*.
- Cervus hippelaphus*, *apud Duvaucel As. Res.*, xv, p. 157, with plate (1825); *Elliot Madr. Journ.*, x, p. 220; *Blyth J. A. S. B.*, xi, p. 449; *Blyth J. A. S. B.*, xx, p. 174; *Kelaart Prodr. Faun. Zeylan.*, p. 83.
- Cervus (Rusa) aristotelis*, *H. Smith, Griffith An. Kingd.*, iv, p. 110 (1827).
- Cervus (Rusa) unicolor*, *H. Smith, Griffith An. Kingd.*, iv., p. 108 (1827).
- Cervus jarai*, *Hodgson Gleanings in Science*, iii, p. 321, pl. xxi (1831); *id. J. A. S. B.*, i, p. 66, pl. v.
- Cervus equinus*, *apud Sykes P. Z. S.*, p. 104 (1831).
- Rusa jaraya*
Rusa napalensis } *Hodgson J. A. S. B.*, x, p. 914 (1841).
Rusa heterocervus }
- Rusa aristotelis*, *Blyth Cat.*, p. 150 (1863); *Ferdon Mamm.*, p. 256; *McMaster Notes on Ferdon*, p. 68; *Blyth J. A. S. B.*, xlv, *Burma List*, p. 45; *Kinloch Large Game Skooting*, ii, p. 24; *Gilbert J. Bomb. Soc.*, iii, p. 224.

Sambur in the plains; Gerow in the Himalayas, and Elk in Southern India and Ceylon; Sambur, Hind. and Mahratta; Jarai or Jarao of the Paharris of the Himalayas; Maha in the Terai; Mahao of the Gonds; Cadavi, Canarese; Kannadi,¹ Telegu; Ghous or Gaoj in Eastern Bengal; Gona Rusa, Cingalese; Khatkhowah Pohoo, Assamese; Schap, Burmese.

Distribution.—India generally from the Himalayas to the extreme south and Ceylon; not found west of the Sutlej (Kinloch), but extending eastward through Assam, Burma and Siam to Hainan?

Cervus equinus is said by Brooke (*l. c.*) to come from Borneo and Sumatra, and he also suggests that it may possibly turn out to be indistinguishable from the true *Cervus aristotelis*. In the Museum collection all the heads coming from Assam and Burma differ markedly from the true Indian heads, in that the outer tine always surpasses the inner tine in length, while in the true Indian forms the outer and inner tines are of approximately equal length; this is the difference as noted by Brooke between *Cervus aristotelis* and *C. equinus*; it is therefore quite possible that it is not the true *Cervus aristotelis* that is found in Assam and Burma, but the allied species *Cervus equinus*.

- a. Skull and ♂ Assam
 horns.
 b. Skull and ♂ Assam
 horns.
 c. Skull and ♂ Arakan
 horns.

F. Jenkins (1846), A.S.B.

E. V. Westmacott (1866),
 A. S. B.

Sir A. Phayre (1847), A.S.B.

<i>d.</i> Skull and horns. ♂	.....	Rajah R. Mullick (1846), A.S.B.
<i>e.</i> Skull and horns. ♂	.....	A.S.B.
<i>f.</i> Skull and horns. ♂	Rewah, N.-W. P.	Dr. Waller [Ex.], 1879.
<i>g.</i> Skull and horns. ♂	Rewah, N.-W. P.	Dr. Waller [Ex.], 1879.
<i>h.</i> Skull and horns. ♂	.....	No history.
<i>j.</i> Skull and horns. ♂	.....	No history.
<i>k.</i> Skull and horns. ♂	.....	No history.
<i>l.</i> Skull and horns. ♂	Banda dist., N.-W. P.	J. Cockburn, 1886.
<i>m.</i> Skull and horns(deformed). ♂	.....	A.S.B.
<i>n.</i> Skull, pt. and horns. ♂	.....	No history, A.S.B.
<i>o-p.</i> 2 Frontlets mtd. ♂	Arakan	Sir A. Phayre, 1847, A.S.B.
<i>q-t.</i> 4 Frontlets ♂	Assam	H. Butcher, 1879.
<i>u.</i> Frontlet ♂	Assam	No history, A.S.B.
<i>v-f</i> ² . 11 Frontlets, mtd. ♂	.....	No history, A.S.B.
<i>g</i> ² . <i>h</i> ² . 2 Frontlets juv. ♂	.....	No history, A.S.B.
<i>j</i> ² . Cast horns mtd. ♂	Cuttack dist.	Purchased 1848, A.S.B.
<i>k</i> ² . Cast horns mtd. ♂	.....	R. C. Beavan.
<i>l</i> ² . <i>p</i> ² . 5 prs. cast horns mtd. ♂	.....	No history, A.S.B.
<i>q</i> ² . 1 pr. horns ♂	Mirzapur dist.	J. Cockburn [P.], 1886.
<i>r</i> ² . 1 pr. horns ♂	Mirzapur dist.	J. Cockburn [P.], 1886.
<i>s</i> ² . 1 pr. horns ♂	Mirzapur dist.	J. Cockburn [P.], 1886.
<i>t</i> ² . Horns ♂	[Cast, 11-3-82]	Zoological Gardens, 1882.
<i>u</i> ² . Horns ♂	" 2-3-81	Zoological Gardens, 1882.
<i>v</i> ² . Horns ♂	" 27-4-81	Zoological Gardens, 1882.
<i>w</i> ² . Horns ♂	" 23-5-80	Zoological Gardens, 1882.
<i>x</i> ² . <i>z</i> ² . 3 Single horns. ♂	.....	A.S.B.
<i>a</i> ³ . <i>b</i> ³ . 2 Single horns. ♂	.....	R. C. Beavan 1865, A.S.B.
<i>c</i> ³ . Single horn. ♂	.....	Hon. Justice Norman.
<i>d</i> ³ . Skull and skin of head. ♀	.....	Rajah R. Mullick, 1880.
<i>e</i> ³ . Skull, skele- ton. ♀	.....	Zoological Gardens, 1880.
<i>f</i> ³ . Skull and skin of head. ♀	.....	Rajah R. Mullick, 1883.

<i>g</i> ^s . Skin, skull ♂ and horns.	.....	Zoological Gardens, 1883.
<i>h</i> ^s . Skin and ♂ [Castrated] skeleton.		O. L. Fraser, 1874.
<i>j</i> ^s . Skin and ♀ skeleton.	.....	W. Rutledge, 1877.
<i>k</i> ^s . Skeleton ♂ mtd.	.....	Barrackpore Menagerie, 1845, A.S.B.
<i>l</i> ^s . Head stuff- ♂ Central India ed.		S. R. Tickell, 1846, A.S.B.
<i>m</i> ^s . Skull	.....	Purchased, A.S.B.
<i>n</i> ^s . Frontlet ♂ Banda dist.		J. Cockburn [P.], 1886.

Cervus swinhoii.

Rusa swinhoii, *P. L. Sclater P. Z. S.*, p. 152, pl. xvii (1862); *Swinhoe*,
P. Z. S., 1862, p. 364; *P. L. Sclater Trans. Zool. Soc.*, vii, p. 349, pl. xxxix.
Cervus swinhoii, *Brooke, P. Z. S.*, p. 901 (1878).

Distribution.—Formosa.

a. 1 pr. horns ♂ [Cast, 29.4-82] Zoological Gardens.

Cervus porcinus.

Cervus porcinus, *Zimmermann Spec. Geogr. Quad.*, p. 532 (1777); *McClelland P. Z. S.*, 1839, p. 150; *Hutton J. A. S. B.*, xv, p. 150; *Brooke P. Z. S.*, 1878, p. 902; *Anderson Zool. Anat. Res.*, p. 340.

Cervus (Axis) *porcinus*, *H. Smith Griffith An. Kingd.*, iv, p. 119 (1828);
Hodgson. J. A. S. B., x, p. 914.

Hyelaphus porcinus, *Sundevall Kongl. Vetens. Akad. Handl.*, p. 180
(1844)*; *Adams P. Z. S.*, 1858, p. 530; *Blyth Cat.*, p. 153; *id. J. A. S. B.*,
xlv, *Burma List*, p. 45; *Murray Zool. Sind*, p. 60.

Axis oryzus, *Kelaart Prodr. Faun. Zeylan.*, p. 83 (1852); *Blyth J. A. S. B.*,
xxiii, p. 217.

Axis porcinus, *Ferdon Mamm.*, p. 262 (1867); *McMaster Notes on Ferdon*,
p. 91; *Kinloch Large Game Shooting*, ii, p. 32 (with plate of head).

The Hog Deer; Para, Hindustani; Khar laguna and Leghuna
in the Nepal terai; Nuthrini haran in parts of Bengal; Weel
mooha, Cingalese; Draï, Burmese.

Distribution.—From Punjab and Sind through the Gangetic
valley and Assam to Burma; it is said to be found in Central
India, but this seems doubtful; is not found in Malabar but occurs
in the lower parts of Ceylon whither possibly it may have been
imported. This deer is confined to the low lands near the
rivers and never ascends into the hills.

<i>a</i> . Skin	♀	Tsitkaw, nr. Bhamo	J. Anderson, 1875
<i>b</i> . Skin skeleton.	♀	.....	Rajah R. Mullick, 1876.
<i>c</i> . Skeleton	♀	.....	Rajah R. Mullick, 1876.
<i>d</i> . Skeleton	♂	.....	Zoological Gardens, 1877.
<i>e</i> . Skeleton	♂	.....	Zoological Gardens, 1878.
<i>f</i> . Skeleton	♀	.....	H. P. Vierre, 1868.

g. Skull	♀	.....	Rajah R. Mullick, 1852, A.S.B.
h. Stuffed	♂	.....	Zoological Gardens, 1877.
j. Skull and horns.	♂	.....	No history, A.S.B.
k. Skull and horns.	♂	.....	No history, A.S.B.
l. Skull	♂ juv.	.....	Rajah R. Mullick, 1857, A.S.B.
m. Skull	♂ juv.	.....	No history, A.S.B.
n u. 8 Frontlets	♂ Assam		H. Butcher, 1879.
v-y. 4 Frontlets	♂ Assam		H. Butcher, 1879.
x-a ² . 2 Frontlets	♂ Martaban		R. C. Beavan, 1865, A.S.B.
b ² -n ² . 12 Front-lets.	♂	.....	No history, A.S.B.
o ² . Skull	♀	.....	R. G. W. Frith, 1843, A.S.B.

Cervus hippelaphus.

Cervus hippelaphus, *G. Cuvier Oss. foss.*, 3rd ed., iv, p. 40 (1825)*; *Brooke P. Z. S.*, 1878, p. 903.

Cervus russa, *Müller and Schlegel Tem. Verhandl.*, p. 217, pls. xliii and xlv, figs. 1-6 (1844); *Blyth J. A. S. B.*, xxiv, p. 480 [foot-note.]

Cervus tunjac, *apud Blyth Cat.*, p. 151 (1863).

Distribution.—Java and several other islands into which it has probably been introduced by human agency; it is still a question as to whether the Timor and Molucca Deer are distinct; it has also been introduced into Mauritius (see Blyth J.A.S.B., xxiv p. 480).

All the specimens of this deer in the Museum were in the old Asiatic Society's Collection and have lost their labels, so that it is impossible to identify the specimens with the list given in Blyth's catalogue, but I suspect that the two of the small frontlets are those catalogued by Blyth at "h" and "i," coming from Timor, in which case they are representatives of the form described by Blainville as *Cervus timoriensis*.

a-b. 2 Skulls and horns.	♂	.....	No history, A. S. B.
c-j. 7 Frontlets	♂	.....	No history, A. S. B.
k. Horns 1 pr.	♂ Moluccas		Zoological Gardens, 1869.
l. Skin, skelet.	♀	.....	Zoological Gardens, 1882.
m. Skull and horns.	♂	.....	Zoological Gardens, 1882.

Cervus duvauceli.

Cervus duvancelii, *G. Cuvier Oss. foss.*, 4th ed., vi, p. 89, pl. cci, figs. 6, 7 and 8 (1835); *Anonymous J. A. S. B.*, v, p. 240; *P. L. Sclater Trans. Zool. Soc.*, vii, p. 346, pl. xxxvi; *Brooke P. Z. S.*, 1878, p. 905.

Cervus bahrainja, *Hodgson P. Z. S.*, p. 99 (1834).

Cervus elaphoides, *Hodgson J. A. S. B.*, iv, p. 648, pl. liii, fig. 4, (1835).

Cervus (Recurvus) elaphoides, *Hodgson Ann. Mag. N. H.*, i, p. 154 (1838); id. *J. A. S. B.*, x, p. 914.
Recervus duvaucelii, *Gray Cat. Mamm., B. M.*, iii, p. 283 (1852); *Blyth Cat.*, p. 150; id. *P. Z. S.*, 1867, p. 835, figs. 1—5; *Blanford, J. A. S. B.*, xxxvi, p. 197; *Ferdon Mamm.*, p. 254.

The Swamp Deer; Barasingha, Hind.; Baraya or Maha in the Nepal terai; Jhinkar in the Kyarda Doon; Potiya haran in Monghyr; Goen or Goenjak ♂ Gaoni ♀ in Central India.

Distribution.—The Terai from the Kyarda Doon in the west to Bootan and Assam in the east, also along the Brahmapootra to the Sunderbunds. In Upper Bengal from Midnapore to the Mandla district in the Central Provinces, confined to low marshy country.

a. Skin	♀	.....	Zoological Gardens, 1877.
b. Skeleton	♀	.....	Rajah R. Mullick.
c. Skeleton	♂	.....	Zoological Gardens, 1877.
d. Skeleton	♂	.....	Rajah of Kuch Behar, 1879.
e. Skull, horns	♂	.....	No history, A.S.B.
f-g. 2 Skulls	♂	.....	No history, A.S.B.
h. Skull	♂ juv.	.....	Rajah R. Mullick, A.S.B.
j. Frontlet	♂ Assam	.....	H. Butcher, 1879.
k. Frontlet	♂ Tezpur, Assam	.....	H. Butcher, 1879.
l. Frontlet	♂ Lakhimpur, Assam	.....	H. Butcher, 1879.
m. Frontlet	♂ Shillong, Assam	.....	Purchased, 1879.
n. Frontlet	♂	.....	T. Hardwicke, 1822, A.S.B.
o. Frontlet	♂	.....	R. W. G. Frith, 1842, A.S.B.
p-u. 6 Frontlets	♂	.....	No history, A.S.B.
v. 1 pr. horns	♂ Sergoojah, Chota Nag-pore.	.....	J. Cockburn, [P.] 1886.
w. 1 pr. horns	♂ [Cast, 2-4-82]	.....	Zoological Gardens.
x. 1 pr. horns	♂	.....	No history, A.S.B.
y-c ² . 5 single horns	♂	.....	No history, A.S.B.
d ² . Skull	♂	.....	Rajah R. Mullick, A.S.B.

Cervus schomburgki.

Recurvus schomburgki, *Blyth P. Z. S.*, p. 155 (1863); id. *P. Z. S.*, 1867, p. 835, figs. 6-12; *Swinhoe P. Z. S.*, 1872, p. 798.
Cervus schomburgki, *Brooke P. Z. S.*, p. 304, figs. 1 and 2 (1876); *P. L. Slater, P. Z. S.*, 1877, p. 682 [with woodcut of head]; *Brooke, P. Z. S.*, 1878, p. 905.

Distribution.—Northern Siam and the Shan States.

a. Skin (flat) ♀	Sanda Valley, Yunnan	J. Anderson, 1878.
b. Frontlet ♂	.....	No history, A. S. B.

Cervus eldi.

♀ *Cervus smithii*, *Gray P. Z. S.*, p. 45 (1837).
 "Nondescript Species of Deer," *McClelland Calc. Journ. N. H.*, i, p. 501, pl. xii, figs. 1a and 1b (1841).

Cervus eldi, *Anonymous Calc. Journ. N. H.*, ii, p. 417, pl. xii (1842); *Beavan P. Z. S.*, 1867, p. 759; *Swinhoe P. Z. S.*, 1860, p. 653, figs. 1-3; *P. L. Slater Trans. Zool. Soc.*, vii, p. 348, pls. xxxvii, xxxviii; *Brooke P. Z. S.*, 1878, p. 906.

Cervus frontalis, *McClelland Calc. Journ. N. H.*, iii, p. 401, pl. xiii, xiv (1843); *Blyth J. A. S. B.*, xxviii, p. 296; *Pollok Sport in Brit. Burma*, i, p. 142.

Panolia acuticornis, *Gray List Mamm., B. M.*, p. 180 (1843); *Cantor J. A. S. B.*, xv, p. 272.

Panolia platyceros, *Gray List Mamm. B. M.*, p. 181 (1843).

Cervus lyratus, *Schinz Synop. Mamm.*, ii, p. 395 (1845).

Cervus dimorphe, *Hodgson J. A. S. B.*, xii, p. 897, with plate (1845).

Panolia eldii, *Gray P. Z. S.*, p. 229 (1850); *Blyth J. A. S. B.*, xxxi, p. 334; *Blyth Cat.*, p. 149; *Blyth P. Z. S.*, 1867, p. 835; *Beavan J. A. S. B.*, xxxvi, p. 175; *Blyth J. A. S. B.*, xliv, *Burma List*, p. 45.

Thamine of Burmese; Sungnai of Maniporees.

Distribution.—From Manipur in the north through Burma to the northern part of the Malay peninsula (Cantor) and through Cambodia to Hainan (Swinhoe); is common in the Pegu and Martaban plains of Lower Burma (Beavan).

a. Skull and ♂ Manipur horns.	J. McClelland (1844), A.S.B.
b. Skull and ♂ Manipur horns.	J. McClelland (1844), A.S.B.
c. Skull and ♂ Manipur horns.	J. McClelland (1844), A.S.B.
d. Skull and ♂ Manipur horns.	Purchased (1861), A. S. B.
e. Frontlet ♂ Manipur	Purchased (1861), A. S. B.
f. Frontlet ♂ Manipur	C. S. Guthrie (1861), A. S. B.
g-h. 2 Skulls ♂ Pegu	Sir A. Phayre (1847), A.S.B.
j. Frontlet ♂ Pegu	Sir A. Phayre (1847), A.S.B.
k. Skull, ♂ Rangoon Bazaar horns.	Dr. Pritchard (1861), A. S. B.
l. Skull, ♂ Sitang River, Tenasserim horns.	Major Berdmore (1856), A. S. B.
m. Frontlet ♂ Martaban, Tenasserim	R. C. Beavan (1865).
n. Frontlet ♂ "brought from Penang"	H. Lewis (1846), A. S. B.
o-p. Stuffed ♀ Rangoon Bazaar heads.	E. Blyth (1861), A. S. B.
q. Skull ♀ Rangoon	Genl. Fytche (1868).

Cervus axis.

Cervus axis, *Erxleben Syst. Reg. An.*, p. 312 (1777); *Elliot Madr. Journ.*, x, p. 221; *Blyth J. A. S. B.*, xi, p. 1202; *Brooke P. Z. S.*, 1878, p. 907.

Cervus (Axis) axis, *H. Smith, Griffith An. Kingd.*, iv, p. 117 (1828).

Cervus nudipalpebra, *Ogilby P. Z. S.*, p. 136 (1831).

Axis major { *Hodgson J. A. S. B.*, x, p. 914 (1841).

Axis minor }

Axis maculata, *Gray List Mamm. B. M.*, p. 178 (1843); *Cantor J. A. S. B.*, xv, p. 270; *Blyth J. A. S. B.*, xx, p. 174; *Kelaart Prodr. Faun. Zeylan.*,

p. 82; *Adams P. Z. S.*, 1858, p. 530; *Blyth Cat.*, p. 152; *Ferdon Mamm.*, p. 260; *McMaster Notes on Ferdon*, pp. 89 and 207; *Kinloch Large Game Shooting*, ii, p. 28 [with plate of head]; *Pollok Sport in Brit. Burma*, i, p. 148.

The Spotted Deer; Chital, Chitra, Chitri or Jhank, Hindustani; Chatidah of Bhagulpore; Boro khotiya of Rungpore; Buriya in Goruckpore; Saraga, Canarese; Dupi, Telegu; Lupi, Gond; Tic mooha, Cingalese.

Distribution.—Indian peninsula and Ceylon, not recorded from the Punjab or to the east of the Bay of Bengal. It is said by Cantor to be common in Sumatra and the Malay peninsula, but is probably introduced there, is also mentioned by Radde as occurring in the Amoor district north of China, but this is probably a mistake. It occurs in the Sunderbunds and is recorded by Pollok from the Manass river and the Durrung both north of the Brahmapootra in Assam.

a. Skin and ♀ skeleton.	.....	J. Anderson, 1878.
b. Skin ♂ juv.	.....	W. Rutledge, 1873.
c. Skin juv. Purneah, Bengal	.....	J. Shillingford, 1871.
d. Skin ♂	.....	Zoological Gardens, 1877.
e. Skeleton ♀ (skull ?)	.....	Rajah R. Mullick, 1875.
f. Skull and ♂ horns. Manbhoom, Bengal	.....	R. C. Beavan, 1865, A.S.B.
g. Frontlet ♂	.....	R. C. Beavan, 1865, A.S.B.
h. Skull and ♂ horns. Mirzapur dist., N.-W. P.	.....	J. Cockburn [P.] 1886.
j-m. 4 Skulls ♂ and horns.	.....	No history, A.S.B.
n-r. 5 Frontlets ♂	.....	No history, A.S.B.
s-t. 2 Skulls ♂ (castrated)	.....	No history, A.S.B.
u. Stuffed head ♂	.....	E. Higgins, 1846, A.S.B.
v. Horns 1 pr. ♂ [Shed, 10-2-77]	.....	Zoological Gardens.
w. Horns 1 pr. ♂ [Shed, 7-1-78]	.....	Zoological Gardens.
x. Horns 1 pr. ♂ [Shed]	.....	Zoological Gardens, 1879.
y. Horns 1 pr. ♂ [Shed]	.....	Zoological Gardens, 1879.
z. Skull and ♂ horns.	.....	Lord Mayo, 1870.
a ² . Skull ♀	.....	A.S.B.
b ² . Horns 1 pr. ♂ [Shed, 18-3-82]	.....	Zoological Gardens.
c ² . Horns 1 pr. ♂ [Shed, 27-12-81]	.....	Zoological Gardens.
d ² . Horns 1 pr. ♂ [Shed, 21-2-80]	.....	Zoological Gardens.
e ² . 1 horn ♂	.....	No history, A. S. B.

Cervus dybowskii.

? *Cervus axis*, *Radde Ost Siberien*, i., p. 286 (1862).

Cervus dybowskii, *Taczanowski P. Z. S.*, p. 123, with fig. (1876); *Brooke P. Z. S.*, 1878, p. 909; *W. L. Sclater J. A. S. B.*, lviii, p. 186, pl. xi.

Distribution.—Mantchuria extending to Thibet?

- a. Skull and skin ♂ "Darjeeling bazaar" A. M. Dunne [Ex.], 1888.
of head.

Cervus sika.

Cervus sika, *Temminck and Schlegel Faun. Jap. Mamm.*, p. 54, pl. xvii (1847); *Blyth Cat.*, p. 148; *P. L. Sclater P. Z. S.*, 1860, p. 377; id. *Trans. Zool. Soc.*, vii, p. 346, pl. xxxv; *Brooke P. Z. S.*, 1878, p. 908.

Rusa japonica, *Gray Ann. Mag. N. H.* (3) vi, p. 218 (1860); id. *P. Z. S.*, 1861, p. 236.

Distribution.—Japan.

- a. Skull and ♂ Japan Hakodate Mus. [Ex.] 1884.
horns.

Cervus taëvanus.

Cervus taiouanus, *Blyth J. A. S. B.*, xxix, p. 90 (1860); *Sclater P. Z. S.* 1860, p. 376.

Cervus taëvanus, *P. L. Sclater P. Z. S.*, 1862, p. 152, pl. xvi; *Swinhoe*, ibid, p. 362; *Blyth Cat.*, p. 148; *P. L. Sclater Trans. Zool. Soc.*, vii, p. 345, pl. xxxiii, xxxiv; *Brooke P. Z. S.*, 1878, p. 909.

Distribution.—The Mountains of Formosa.

- a. Skull ♂ Formosa R. Swinhoe (1860), A. S. B.
[Type of *Cervus taiouanus*, Blyth.]

Cervus elaphus.

Cervus elaphus, *Linnaeus Syst. Nat.*, 12th ed. i, p. 93 (1766); *Blasius Säugeth. Deutsch.*, p. 439; *Blyth J. A. S. B.*, xxx, p. 185; id. *Cat.*, p. 147; *Danford and Alston P. Z. S.*, 1877, p. 276; id. ibid., 1880, p. 54; *Brooke P. Z. S.*, 1878, p. 910.

Cervus barbarus, *Bennet List An. Gard. Zool. Soc.*, 13th ed., p. 31 (1837)*.

The Red Deer.

Distribution.—The British Isles and Europe generally, Corsica, Sardinia, Algeria, Asia Minor and the Caucasus; is replaced in Northern and Eastern Asia by an allied species; distinguished as *C. xanthopygus* by Milne Edwards.

- | | |
|--|---|
| a. Stuffed head ♂ Scotland | H. R. H. Prince Consort
1861, A.S.B. |
| b. Skull and ♂ Great Britain
horns. | W. Davison, 1846, A.S.B. |
| c. Skull and ♂ Great Britain
horns. | W. Davison, 1846, A.S.B. |
| d-e. 2 Frontlets ♂ Great Britain | W. Davison, 1846, A.S.B. |
| f. Horns 1 pr. ♂ | C. Darwin, 1846, A.S.B. |
| g. Skeleton ♂ Scotland | J. Struthers [Ex.] 1881. |
| h. Odd horn ♂ | No history. |

Cervus eustephanus.

Cervus eustephanus, *Blanford P. Z. S.*, p. 637 (1875); *id. Yarkand Mamm.*, p. 90; *Brooke P. Z. S.*, 1878, p. 912.

? *Cervus maral*, *Severtzoff Turk. Fev.*, pp. 62, 103, etct. with figs. of horns (1873); *id. Ann. Mag. N. H.* (4), xviii, p. 377.

Distribution.—Thian Shan and Altai Mountains.

a. 1 pr. horns Thian Shan Mts. F. Stoliczka, 1874.

[Type of *Cervus eustephanus*, Blanford.]

Cervus affinis.

Cervus wallichii, *G. Cuvier Oss. foss.*, 4th ed., vi, p. 89 (1835); *F. Cuvier Hist. Nat. Mamm.*, livr. 39, with plate; *Blyth J. A. S. B.*, x, p. 745; *Hodgson J. A. S. B.*, xi, p. 284; *Blyth J. A. S. B.*, xxi, p. 341; *id. J. A. S. B.*, xxii, p. 592; *id. J. A. S. B.*, xxiii, p. 217.

Cervus elaphus, *apud Hodgson J. A. S. B.*, iv, p. 648, pl. liii, fig. 5 (1835).

Cervus affinis, *Hodgson J. A. S. B.*, x, p. 721, with plate (1841); *id. ibid.*, p. 914; *id. J. A. S. B.*, xix, with plate of horns, p. 466; *Gray P. Z. S.*, 1850, p. 228; *Hodgson J. A. S. B.*, xx, p. 388, pl. vii; *Blyth J. A. S. B.*, xxx, p. 188; *id. Cat.*, p. 146; *Ferdon Mamm.*, p. 251; *Blanford J. A. S. B.*, xli, p. 39; *Brooke P. Z. S.*, 1878, p. 913.

The Shou of Tibetans.

Distribution—Eastern Tibet; this stag has been only got through native collectors and it seems probable that it has never occurred on the Indian side of the passes or indeed any nearer India than in the Chumbi Valley.

a. Skin	♀	Thibet	L. Mandelli, 1877.
b. Skin, skull and horns.	♂	nr. Phari, Thibet	Sir A. Eden, 1882.
c. Stuffed	♂	Thibet	L. Mandelli, 1877.
d. Skull and horns.	♂	nr. Phari, Thibet	A. Campbell, 1851, A. S. B.
e. 1 pr. horns	♂	.....	No history.
f. 1 pr. horns	♂	nr. Dhoulagiri, Thibet	Barrackpore Menagerie, A. S. B.

[Type of *C. wallichii*, Cuvier.]

Cervus cashmeerianus.

"Kashmir stag," *Blyth P. Z. S.*, 1840, p. 79.

Cervus cashmerensis, *Gray List Osteol. Spec. B. M.*, p. 65 (1847); *Blyth J. A. S. B.*, xxiii, p. 734; *Adams P. Z. S.*, 1858, p. 529; *Lydekker J. A. S. B.*, xlv, p. 286.

Cervus wallichii, *apud Wagner Hugel's Kaschmir*, iv p. 576 (1849); *Blyth J. A. S. B.*, xxx, p. 188; *id. Cat.*, p. 146; *Ferdon Mamm.*, p. 250; *Kinloch Large Game Shooting*, i, p. 44.

Cervus cashmeerianus, *Falconer Palæont. Memoirs*, i, p. 576 (1868); *P. L. Slater Trans. Zool. Soc.*, vii, p. 339 (with woodcut and pl. xxx); *Brooke P. Z. S.*, 1878, p. 912; *Scully J. A. S. B.*, lvi, p. 76.

The Kashmir Stag ; Barasingha, Hind. ; Hangul or Honglu of Kashmir.

Distribution.—The Kashmir Valley, not extending eastwards ; a single horn was procured by Major Yate near Balkh in Afghan-Turkestan.

Sir V. Brooke's nomenclature has been followed for this and the preceding species and Cuvier's name *Cervus wallichii* has been ignored since it seems impossible to decide with any certainty to which species the specimen described by Baron Cuvier refers. The pair of horns shed by the animal whose portrait appears in M. F. Cuvier's *Histoire Naturelle des Mammiferes* is still here in the Museum, *C. affinis* "f", they are the horns of a young stag probably in its third year, the right-hand antler is a simple beam with a brow and bez antler only, the brow being considerably the longest ; the left-hand antler bears, in addition to the brow and bez antlers, a third the royal, but in this case the bez surpasses the brow in length ; in the case of the Tibetan stag (*Cervus affinis*), the brow and bez are approximately of the same length, whereas in the case of the Kashmir stag the bez is generally considerably the longer of the two ; so that, as far as the respective lengths of the brow and bez antlers are concerned, there is no ground for considering *C. wallichii* to be either the Kashmir or Tibetan stag.

The antlers present no other points of note which throw any light on their affinity.

The stag which bore the antlers in question is said to have been brought from near Mt. Dhoulagiri to the north of Nepal on the further side of the snowy range, and it therefore seems probable that the animal really was, as Jerdon thought, a deformed young specimen of *Cervus affinis*.

a. Skull and ♂ Kashmir Valley	R. Lyddekker [Ex.], 1878.
horns.	
b-c. 2 Frontlets ♂	..... No history.
d. 1 pr. horns ♂	..... No history.
e-f. 2 horns ♂	..... Purchased, 1872.
g. Single horn ♂	..... R. C. Beavan.
h. Single horn ♂ Oxus River nr. Balkh	C. E. Yate, 1887.

Cervus canadensis.

Cervus canadensis. *Erxleben Syst. Reg. An.*, p. 305 (1777) ; *Blyth J. A. S. B.*, x, p. 737 ; id. *ibid.*, xxii, p. 592 ; id. *Cat.*, p. 146 ; *Brooke P. Z. S.*, 1878, p. 913.

Cervus wapiti, *Leach Journal de Physique*, lxxxv, p. 66 (1818)*.

The Wapiti.

Distribution.—Alleghanies, Minnisota, Dakota, Nebraska, Washington, Oregon and California, northwards to 57° N. Lat.

a. Skin and skeleton	♀	.....	Zoological Gardens, 1882.
b. Skin	♂	North America	Brit. Mus. [Ex.] 1879.
c. Skull, horns	♂	.....	No history.
d. Frontlet	♂	.....	Purchased, 1859, A. S. B.
e. Frontlet	♂	.....	No history
f. Skin juv.	♂	... ..	Zoological Gardens, 1881.

Cervus dama.

Cervus dama, *Linnaeus Syst. Nat.*, 12th ed., i, p. 93 (1766); *Blasius Säuegeth. Deutsch.*, p. 453; *Feittles, Slater, Boyd Dawkins and Brooke Nature*, xi, pp. 71, 112, 210 and 226; *Brooke P. Z. S.*, 1878, p. 913.

Cervus (Dama) dama, *H. Smith Griffith An. Kingd*, iv, p. 84 (1827).

Dama vulgaris, *Gray List Mamm. B. M.*, p. 181, (1843); *Blyth Cat.*, p. 148.

The Fallow Deer.

Distribution.—Circum-Mediterranean, *i.e.*, Greece, Spain, Asia Minor, Sardinia, Algeria and Northern Palestine, introduced into England.

a. Skull	♂	Great Britain	W. Davison, 1846, A.S.B.
b. Frontlet	♂	.....	C. Darwin, 1857, A.S.B.
c. Frontlet	♂	... ..	E. Blyth, A.S.B.
d. Skull	♂	.....	No history.
e-f. 2 Skeletons	♀	.....	Rajah R. Mullick.
g. Skull	♀	.....	Rajah R. Mullick.
h. Skull	♀	.....	No history, A.S.B.
j. Skull	♂	.....	W. Rutledge, 1881.
k. 1 pr. horns	♂	.....	No history, A.S.B.
l-n. 3 odd horns	♂	.....	C. Darwin, A.S.B.

Genus ALCES.

Alces, *H. Smith, Griffith An. Kingd.*, v, p. 303 (1827) [as a sub-genus].

Alces machlis.

Cervus alces, *Linnaeus Syst. Nat.*, 12th ed. i, p. 92 (1766).

Cervus (Alces) alces, *H. Smith, Griffith An. Kingd.*, iv, p. 72 (1827).

Alces machlis, *Ogilby P. Z. S.*, p. 135 (1836); *Blyth Cat.*, p. 145; *Brooke P. Z. S.*, 1878, p. 916.

Alces americanus, *Fardine Nat. Libr.*, xi, p. 125 (1837).

Alces palmatus, *Gray List Mamm. B. M.*, p. 182 (1843); *Blasius Säuegeth. Deutsch.*, p. 434.

The Elk or Moose.

Distribution—Sweden, Northern Russia, Siberia and North America from the Columbia river on the west and Maine on the east coast northwards (Brooke).

a. Skull	♂	Scandinavia.	Christiania Univ., 1846, A.S.B.
b. Frontlet	♂	.....	No history, A.S.B.

- c. Skull ♂ Umbagog Lake, Maine, J. G. Rich.
U. S. A.
d. Skull ♂ Nova Scotia H. A. Ward [Ex.], 1889.

Genus **CAPREOLUS.**

Capreolus, *H. Smith, Griffith An. Kingd.*, v, p. 313 (1827) [as a sub-genus.]

Capreolus capraea.

- Cervus capreolus*, *Linnaeus Syst. Nat.*, 12th ed., i, p. 94 (1766).
Cervus (Capreolus) capreolus, *H. Smith, Griffith An. Kingd.*, iv, p. 124 (1827);
Blasius Säuegeth. Deutsch., p. 457.
Capreolus capraea, *Gray List Mamm. B. M.*, p. 176 (1843); *Blanford Persia*,
p. 96.
Capreolus europaeus, *Sundevall Kongl. Vetensk. Akad. Handl.*, p. 184
(1844)*; *Blyth Cat.*, p. 157.

The Roe Deer.

Distribution.—Europe generally, Northern Palestine, and the Elburz Mountains.

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|------------------|---|----------------------|------------------------------|
| a-b. 2 Skulls | ♂ | | Purchased, 1860, A.S.B. |
| c. Skull | ♂ | | No history. |
| d. Skull | ♂ | Hungary? | Hungarian Mus., A.S.B. |
| e-g. 3 Frontlets | ♂ | Great Britain | W. Davison, 1844, A.S.B. |
| h. Skull | ♂ | Scotland | Sir W. Jardine, 1850, A.S.B. |
| j. Skull | ♂ | Astrabad, N. Persia | B. Lovett, 1883. |
| k. Skin | ♀ | Astrabad, N. Persia. | B. Lovett, 1883. |

Genus **CARIACUS.**

Mazama, *H. Smith, Griffith An. Kingd.*, v, p. 314 (1827) [as a sub-genus].
Cariacus, *Gray List Mamm. B. M.*, p. 175 (1843).

Cariacus virginianus.

- Cervus virginianus*, *Boddaert Elench. Anim.*, i, p. 136 (1774)*; *Baird N. Amer. Mamm.*, p. 643, figs. 12, 13*.
Cervus mexicanus, *Gmelin Syst. Nat.*, i, p. 179 (1788); *Baird N. Amer. Mamm.*, p. 653*.
Cervus (Mazama) virginianus, *H. Smith, Griffith An. Kingd.*, iv, p. 127 (1827).
Cariacus virginianus, *Gray List Mamm. B. M.*, p. 175 (1843); *Blyth Cat.*, p. 157; *Brooke P. Z. S.*, 1878, p. 919.
Cariacus mexicanus, *Brooke P. Z. S.*, 1878, p. 919.

Distribution.—North America from Canada and British Columbia, southwards to Panama, perhaps to Peru.

- | | | | |
|------------------|------|------------------------|--------------------------------|
| a. Skull | ♂ | Upton, Maine, U. S. A. | W. Theobald, 1868. |
| b. Skull | juv. | ..... | A. D. Bartlett, 1849, A. S. B. |
| c-d. 2 Frontlets | ♂ | ..... | A. S. B. |
| e. Frontlet | ♂ | ..... | No history. |

<i>f.</i> Skull	♀ Upton, Maine, U. S. A.	W. Theobald, 1868.
<i>g.</i> Skin, skull	♂ Spirit Lake, Ont., 11-12-84.	J. H. Garnier [Ex.]
<i>h.</i> Skin, skull	♀ Spirit Lake, Ont., 31-10-84.	J. H. Garnier [Ex.]

Genus RANGIFER.

Rangifer, *H. Smith, Griffith An. Kingd.*, v, p. 304 (1827) [as a sub-genus].
Tarandus, *Ogilby P. Z. S.*, p. 134. (1836).

Rangifer tarandus.

Cervus tarandus, *Linnaeus Syst. Nat.*, 12th ed., i p. 93 (1766).
Cervus (Rangifer) tarandus, *H. Smith Griffith, An. Kingd.*, iv., p. 79 (1827).
Tarandus rangifer, *Ogilby P. Z. S.*, p. 134 (1836); *Blyth Cat.*, p. 145.
Rangifer tarandus, *Gray List Mamm. B. M.*, p. 181 (1843); *Brooke P. Z. S.*, 1878, p. 928.
Rangifer caribou et groenlandicus, *Baird N. Amer. Mamm.*, p. 633 (1857)*.

Distribution.—Circumpolar, *i.e.*, Northern Europe, Asia and America.

<i>a.</i> Frontlet	♂ Scandania	Christiania Univ., 1846, A.S.B.
<i>b.</i> Frontlet	♂	E. Blyth, A.S.B.
<i>c.</i> Skull	Scandania	Stockholm Mus. [Ex.], 1887.
<i>d.</i> Skull	North America	W. Theobald, 1868.
<i>e.</i> Skull	♂	H. A. Ward [Ex.], 1889.

Genus TRAGULUS.

Tragulus, *Pallas Spic. Zool.* xiii, p. 27 (1778).
Meminna, *Gray Ann. Philos.* xvi (1825)*.

There has been a great deal of confusion in the synonymy of this genus; Milne Edwards published in 1864 a monograph on the subject and first elucidated matters. Besides *T. meminna*, which is quite distinct, there seem to be two well-marked forms and several varieties which are doubtfully worthy of specific distinction; the typical *T. napu* is of a grayish tinge and has two varieties, one unnamed, reddish with a strongly marked nuchal stripe, the other called *T. stanleyanus* of Gray, a still brighter red without any trace of the nuchal stripe; of the smaller forms, the one best known is *T. kanchil*, the other *T. javanicus*, is said to be distinguishable from *T. kanchil*, but is apparently confined to the island of Java and there is no representative of it in the Museum.

Key of the Indian Species.

- a.* Body spotted ***T. meminna***, p. 189.
*a*². Body not spotted
b. Larger, tarsus and hind-foot, 5·8 inches, with 5 white
throat stripes ***T. napu***, p. 190.

$\frac{1}{2}$. Smaller, tarsus and hind-foot, 4 8 inches, with 3 white throat stripes . **T. kanchil**, p. 189.

Tragulus memminna.

- Moschus memminna* *Erxleben Syst. Reg. An.*, p. 322 (1777); *Sykes P. Z. S.*, 1831, p. 104; *Elliot Madr. Journ.*, x, p. 220; *Tickell Calc. Journ. N. H.* i, p. 420; *Blyth F. A. S. B.*, xi, p. 96.
Meminna indica, *Gray P. Z. S.*, p. 63 (1836); *Blyth F. A. S. B.*, xx, p. 174; *Kelaart Prodr. Faun. Zeylan.*, p. 81; *Blyth Cat.*, p. 155; *Ferdon Mamm.*, p. 269; *McMaster Notes on Ferdon*, p. 98.
Tragulus mimenoides, *Hodgson F. A. S. B.*, x, p. 914 (1841).
Tragulus memminna, *A. Milne Edwards Ann. Sci. Nat.* (5), ii, p. 160 (1864); *Blyth P. Z. S.*, 1864, p. 483.

The Mouse-deer; Pisuri, Hindu; Burka, Canarese; Mugi of Central India; Yar of the Kols; Gandwa, Oorlah; Jitri Haran, Bengali; Kurupandi, Telegu; Walmooha, Cingalese.

Distribution.—The large forests of the Indian peninsula and Ceylon; it is said to have occurred in the Himalayan Terai.

a. Skin	♀		Zoological Gardens, 1880.
b. Skin, ♂ juv.	.....		W. Rutledge, 1881.
skull			
c. Skin	♀ juv.		W. Rutledge, 1881.
d. Skin	Ceylon		Columbo Museum, 1888.
e. Skin, skele-♀	.....		Zoological Gardens, 1880.
ton.			
f. Skin, skele-♂	.....		W. Rutledge, 1881.
ton.			
g. Skin, skele-♂	Ceylon?		W. Rutledge, 1873.
ton.			
h. Skeleton	♂	.....	W. Rutledge, 1881.
j. Stuffed	♂ India		Dr. MacCosh, 1835, A. S. B.
k. Stuffed	♀ Ceylon		Babu M. Dey, 1870.
l. Stuffed	juv. India		Mrs. Lindstedt, 1842, A.S.B.

Tragulus kanchil.

- Moschus kanchil*, *Raffles Linn. Trans.*, xiii, p. 262 (1822); *Gray P. Z. S.*, 1836, p. 64; *Fentink Notes Leyd. Mus.*, v., p. 181.
Moschus fulviventer, *Gray P. Z. S.*, 1836, p. 65 (1836).
Tragulus kanchil, *Gray List Mamm. B. M.*, p. 173 (1843); *Cantor F. A. S. B.*, xv, p. 268; *Blyth F. A. S. B.*, xxvii, p. 276; *id. Cat.*, p. 156; *Milne Edwards Ann. Sci. Nat.* (5), ii, p. 159; *Blyth P. Z. S.*, 1864, p. 483; *id. F. A. S. B.*, xlv, *Burma List*, p. 44; *Thomas P. Z. S.*, 1886, pp. 72, 79; *Fentink Notes Leyd. Mus.*, xi, p. 25; *Anderson F. Linn. Soc.*, xxi, p. 341.
?Tragulus pelandoc, *Blyth F. A. S. B.*, xxvii, p. 277 (1858); *id. Cat.*, p. 156.

Distribution.—Tenasserim, Siam and Cambodia, the Malay peninsula and Sumatra.

This species is represented in Java by nearly allied species *Tragulus javanicus* of Pallas, which seems to differ from *Tragulus kanchil* merely in the absence of the nuchal streak so con-

spicuous in *Tragulus kanchil*; *Tragulus affinis* described by Gray from Cambodia, *P. Z. S.*, 1861, p. 138, also seems to be merely a geographical variety of *T. kanchil*.

a. Skin	♂	.....	A.S.B.
b. Skin	♀	.....	A.S.B.
c. Skin		Thaing, Mergui, 31-1-82	J. Anderson.
d. Skin	♀	Pilai, Mergui, 3-3-82	J. Anderson.
e. Skin	♂ ?	Thaing, Mergui, 31-1-82	J. Anderson.
f. Skin	♂ ?	Thaing, Mergui, 27-1-82	J. Anderson.
g. Skin	♂	Pilai, Mergui, 7-3-82	J. Anderson.
h. Skin		Mergui, 24-2-82	J. Anderson.
i. Skin		Mergui, 21-1-82	J. Anderson.
k. Skin	♂	.....	Zoological Gardens, 1877.
l. Skin, skull	♀	.....	W. Rutledge, 1878.
m. Skin	♂	... ..	W. Rutledge, 1877.
n. Skin		.....	W. Rutledge, 1877.
o. Skin	♀	.....	Zoological Gardens, 1880.
p. Skin	♀	.....	W. Rutledge, 1877.
q. Skin	♀	.....	W. Rutledge, 1877.
r. Stuffed		.....	No history.
s. Stuffed		.....	Maharajah of Burdwan, (1858), A.S.B.
t. Stuffed, skull	Plembang Isle, Sumatra ?	.....	W. Rutledge, 1874.
u. Skin, skeleton.		.....	W. Rutledge, 1877.
v. Skin, skeleton.	♂	.....	W. Rutledge, 1875.
w. Skin, skeleton.	♀	.....	W. Rutledge, 1877.
x. Skin, skeleton.	♂	.....	W. Rutledge, 1877.
y. Skin, skeleton.	♂	.....	W. Rutledge, 1877.
z. Skin, skeleton.	♂	.....	W. Rutledge, 1875.
a ² . Skin, skeleton.	♀	.....	W. Rutledge, 1877.
b ² -c ² . 2 Skulls		.....	No history, A.S.B.
d ² . Skeleton, mounted.	♂	.....	W. Rutledge, 1872.

Tragulus napu.

Moschus napu, *F. Cuvier Hist. Nat. Mamm.*, livr. 37, with plate (1822).

Moschus javanicus, *apud Raffles Linn. Trans.*, xiii, p. 261 (1822); *Gray P. Z. S.*, 1836, p. 64.

Tragulus javanicus, *apud Gray List Mamm. B. M.*, p. 173 (1843); *Cantor J. A. S. B.*, xv, p. 269; *Blyth J. A. S. B.*, xxvii, p. 277; *id. Cat.*, p. 155.

Tragulus fuscatus, *Blyth J. A. S. B.*, xxvii, p. 278 (1850).

Tragulus napu, *Milne Edwards Ann. Sci. Nat.* (5), ii p. 158 (1864); *Blyth P. Z. S.*, 1864, p. 483; *Blanford J. A. S. B.*, xlvii, p. 166; *Thomas P. Z. S.*, 1886, p. 71; *Fentink Notes Leyd. Mus.*, xi, p. 25.

Distribution.—From Tenasserim (Blanford), southwards through the Malay peninsula, Sumatra (Raffles), Java (Blyth), Banka and Borneo (Jentink).

a. Skin	♀	.....	W. Rutledge, 1881.
b. Skin	♀	.....	W. Rutledge, 1877.
c. Skin, skull	♂	Plembang Isle, Sumatra	W. Rutledge, 1872.
d. Skin, skull	♂	Plembang Isle, Sumatra	W. Rutledge, 1872.
e. Skin	♂ juv.	.....	W. Rutledge, 1876.
f. Stuffed	♂	Malay peninsula	W. Rutledge, 1871.
g. Stuffed	♀	Malay peninsula	W. Rutledge, 1872.
h. Stuffed	♀	Java	Batavian Soc., 1844, A.S.B.

[Type of *Tragulus fuscatus*, Blyth.]

j. Stuffed	♀	Java	W. Rutledge.
k. Skin, skeleton		.....	No history, 1881.
l. Skull		.....	A.S.B.

Tragulus stanleyanus.

Moschus stanleyanus, Gray P. Z. S., p. 65 (1836).

Tragulus stanleyanus, Milne Edwards Ann. Sci. Nat. (5), ii, p. 160 (1864);
Blyth P. Z. S., 1864, p. 483.

Distribution.—Malay peninsula and Java?

a. Skin	♂	.....	W. Rutledge, 1877.
b. Skin	♀	.....	W. Rutledge, 1879.
c. Skin, skull	♂	.....	W. Rutledge, 1877.
juv.			
d. Stuffed	♂	Java	A. Grote, 1867.
e. Stuffed	♀	Malay peninsula	W. Rutledge, 1870.
f. Stuffed	♀	Malay peninsula	W. Rutledge, 1870.
g. Skin, skeleton.	♂	.....	W. Rutledge, 1874.
h. Skin, skeleton.	♀	.....	W. Rutledge, 1874.

Genus CAMELUS.

Camelus, Linnæus, Syst. Nat., 12th ed., i, p. 90 (1766).

Camelus bactrianus.

Camelus bactrianus, Linnæus, Syst. Nat., 12th ed., i, p. 90 (1766); Gray Cat. Mamm. B. M., iii, p. 253; Hutton J. A. S. B., xv, p. 167; Radde Ost Siberien, p. 238; Finsch P. Z. S., 1876, p. 696; Severtzoff Ann. Mag. N. H. (4), xviii, p. 170; Przewalsky Peters. Mitth. Erzb., xii, p. 17; Blanford Persia, p. 97.

Distribution.—The Bactrian Camel has been recently discovered in a feral state by Przewalsky (*loc. cit.*) in the region of Lob Nor in Central Asia; it is found in a domesticated condition in Turkestan and Central Asia generally; it appears to be but rarely seen in Afghanistan and Persia.

a. Skeleton mtd. and skin.	♂	.....	King of Oude, 1877.
b. Skeleton	♂	.....	King of Oude, 1877.
c. Skeleton	♀	.....	King of Oude, 1877.

Camelus dromedarius.

- Camelus dromedarius*, *Linnaeus Syst. Nat.*, 12th ed., i, p. 90 (1766); *Hutton and Blyth J. A. S. B.*, xv, p. 162; *Tristram P. Z. S.*, 1866, p. 87; *Blyth Cat.*, p. 143; *Blanford Persia*, p. 97.
Camelus dromas, *Pallas Zoog. Röss. As.*, p. 197 (1831); *Severtzoff Ann. Mag. N. H.* (4), xviii, p. 170.
Camelus arabicus, *Desmoulins Dict. Class. H. N.*, iii, p. 452 (1824-30); *Gray Cat. Mamm. B. M.*, iii, p. 252.

Distribution.—The One-humped Camel has never been found in a truly feral state; it is found domesticated in India, Afghanistan and Western Asia generally, and also in Northern Africa.

a. Skin and skeleton.	.....	Karachi Museum, 1877.
b. Skeleton ♂	.....	Babu H. M. Roy, 1881.
c. Skeleton ♂ mtd.	.....	King of Oude, 1839, A. S. B.
d. Skull ♀	.....	R. C. Tytler, 1861, A. S. B.
e. Skull	.....	No history.
f-g. 2 skulls	Jaysulmere, Rajputana	N. Belletty, 1890.

Genus AUCHENIA.

Lama, *Cuvier Tableau Gen. in Leçons d'Anat. Comp.*, 1st ed. (1800)*. †
Auchenia, *Illiger Prodr.*, p. 103 (1811).

Auchenia glama.

- Camelus glama*, *Linnaeus Syst. Nat.*, 12th ed., i, p. 91 (1766).
Lama peruana, *Tiedemann Zool.*, i, p. 421 (1808).
Auchenia Llacma, *Illiger Prodr.*, p. 103 (1811).
Auchenia glama, *Blyth Cat.*, p. 144 (1863).

Distribution.—The Andes of South America, only known in a domestic state.

a. Skin, skeleton.	♂	.....	W. Rutledge, 1881.
b. Skin	♀	.....	W. Rutledge, 1881.
c. Skin	♂	.....	W. Rutledge, 1881.
d. Skeleton	♂	.....	W. Rutledge, 1881.
e. Skeleton	♂	.....	W. Rutledge, 1881.
f. Skeleton	♂	.....	W. Rutledge.
g. Skeleton	♂	.....	W. Rutledge, 1879.
h. Skeleton mtd.		.....	Earl of Derby, 1850.
j. Stuffed		.....	No history.

Genus SUS.

Sus, *Linnaeus Syst. Nat.*, 12th ed., i, p. 102 (1766).

† Afterwards abandoned by the author in favour of *Auchenia*.

Sus cristatus.

- Sus cristatus*, *Wagner Münch. Gel. Anz.*, ix, p. 435 [misprinted 535] (1839); *Gray P. Z. S.*, 1868, p. 27; *Blyth J. A. S. B.*, xliv, *Burma List*, p. 43; *Murray Zool. Sind*, p. 54.
- Sus scrofa*, *apud Sykes, P. Z. S.*, p. 104 (1831); *Elliot Madr. Journ.*, x, p. 219; *McClelland P. Z. S.*, 1839, p. 150; *Adams P. Z. S.*, 1858, p. 531; *Blyth Cat.*, p. 139 [divided into several races]; *Blanford J. A. S. B.*, xxxvi, p. 197; *Anderson J. Linn. Soc.* xxi, p. 341.
- Sus indicus*, *Gray List Mamm. B. M.*, p. 185 (1843); *Hutton and Blyth, J. A. S. B.*, xv, p. 135; *Cantor J. A. S. B.*, xv, p. 261; *Kelaart Prodr. Faun. Zeylan*, p. 78; *Blyth J. A. S. B.*, xxix, p. 105; *Jerdon Mamm.*, p. 241; *MacMaster Notes on Jerdon*, p. 59; *Stoliczka J. A. S. B.*, xli, p. 228; *Lydekker J. A. S. B.*, xlvi, p. 287.
- Sus aper* vars. *aipomus* et *isonotus*, *Hodgson J. A. S. B.*, x, p. 911 (1841).
- Sus zeylonensis*, *Blyth J. A. S. B.*, xx, p. 173 (1851); *id. J. A. S. B.*, xxi, p. 351; *id. J. A. S. B.*, xxix, p. 105.
- Sus bengalensis*, *Blyth J. A. S. B.*, xxix, p. 105 (1860).

The Indian Wild Boar; Sur, Suwar, Bura janwar or Bud janwar, Hindustani; Dukar, Mahratti; Handi, Mikka or Jewardi, Canarese; Pandi, Telegu; Paddi of the Gonds; Waloor, Cingalese; Tauwet, Burmese.

Distribution.—All over India, from the Himalayas to Cape Comorin, Ceylon and Burma, but possibly replaced by another species in Tenasserim.

It has always been a question as to whether the Indian and European Wild Boars differ sufficiently from one another to warrant their separation as distinct species; Blyth finally considered them merely as geographical varieties of one species, Jerdon separated them entirely.

On comparing the skulls of the two, slight differences are to be found, but it is a question if they would be constant if a larger series of skulls were examined.

In the European form the parietal region of the skull above the eyes is flat or almost concave, not convex, as in the Indian boar; behind this region the skull is much reduced, so that it forms a narrow ridge barely a inch across, while in the Indian boar, although this part of the skull is reduced, it is very much wider than in the European boar.

In the European boar, again, the nasals are longer than the rest of the skull measured from the naso-frontal suture to the occipital ridge; in the Indian boar they are generally, though not invariably, shorter.

The anterior palatine foramen in the European boar is pear-shaped, tapering to a point posteriorly, while in the Indian boar it is somewhat oval-shaped and ends in a blunt point posteriorly. The European boar is said to have small warts under the eye while the Indian boar has none.

There are in the Museum two specimens of the Yarkand wild boar collected by Stoliczka and described by Blanford in the Yarkand Mission report; the skulls of these specimens agree

with that of the European form (*S. scropha*) except that the nasals are short and the anterior palatine foramina agree with those of the Indian form (*Sus cristatus*).

Blyth in his catalogue further distinguished no less than four different Indian races, (1) the typical Indian race, with the narrow occipital vertex, about $1\frac{1}{2}$ inches wide at the narrowest point, found all over India and Ceylon, (2) the Bengal race, with the wide occipital plane, about $2\frac{1}{4}$ inches across, (3) the Tenasserim race considerably smaller; (4) a distinct Ceylonese race, with a very large posterior molar.

On comparing the skulls, which have been acquired by the Museum since Blyth's time with Blyth's original specimens, the distinction between the Bengal race and the typical Indian race breaks down, and the width of the occipital plane seems to be merely an individual peculiarity; the Ceylonese skull must be regarded as an abnormal one; the Tenasserim skulls, however, resemble that of a specimen, acquired thence more recently, which may possibly be identical with *Sus leucomystax* of China and Japan; it is possible that this latter race may have been imported from China and have run wild in Tenasserim.

<i>a.</i> Stuffed	Goalundo	Museum Collector (1876).
<i>b.</i> Skelet. mtd	[domestic var.]	A. R. Jackson (1837), A.S.B.
<i>c.</i> Skull ♂	Gorruckpore terai, N.W.P.	J. C. Peppé (1847), A.S.B.
<i>d.</i> Skull ♀	Arakan	Sir A. Phayre (1846), A.S.B.
<i>e-h.</i> 4 Skulls	Gorruckpore terai, N.W.P.	J. C. Peppé (1862), A.S.B.
<i>j.</i> Skull ♂	Cuttack, Bengal	T. Shawe (1845), A.S.B.
<i>k-l.</i> 2 Skulls ♀	Punjab Salt Range	W. Theobald (1853), A.S.B.
<i>m.</i> Skull ♂	Akyab bazaar	E. Blyth (1861), A.S.B.
<i>n.</i> Skull ♂	Ceylon	E. F. Kelaart (1851), A.S.B.
<i>o.</i> Skull juv.	Ceylon	E. F. Kalaart (1851), A.S.B.
<i>p.</i> Skull	Ceylon	E. F. Kelaart (1850), A.S.B.

[Type of *Sus zeylonensis*, Blyth.]

<i>q.</i> Skull ♂	Purneah dist.	J. L. Shillingford, 1881.
<i>r.</i> Skull	Eastern Bengal	J. Biddulph, 1877.
<i>s-t.</i> 2 Skulls ♂	Central India?	J. Cockburn [P.], 1886.
<i>u-v.</i> 2 Skulls ♀	Central India?	J. Cockburn [P.], 1886.
<i>w.</i> Skull [dom. var. ?]	Soonderbunds	A. M. Nicholetts, 1866.
<i>x.</i> Skull [dom. var. ?]	Nicobars	W. Hodge, 1860, A.S.B.
<i>y.</i> Skeleton ♂	Purneah	J. L. Shillingford, 1881.
<i>z.</i> Skull	.....	No history, A.S.B.
<i>a².</i> Skin, ♀ juv. and skull.	Padow, Mergui, 8-2-82	J. Anderson.
<i>b².</i> Skin ♀ juv.	King Isle, Mergui, 27-1-82	J. Anderson.
<i>c².</i> Skin ♀ juv.	King Isle, Mergui, 27-1-82.	J. Anderson.
<i>d².</i> Skull	.....	No history, A.S.B.
<i>e².</i> Skull	.....	No history, A.S.B.

Sus andamanensis.

Sus andamanensis, *Blyth* *J. A. S. B.*, xxvii, p. 267 (1858); *id. ibid.*, xxviii, p. 271; *id. ibid.*, xxix, p. 103; *id. Cat.*, p. 141; *Gray P. Z. S.*, 1868, p. 29.

Distribution.—The Andamans and possibly the Nicobars.

a. Stuffed	♀ Andamans	G. W. Wicks, 1873.
b. Skeleton- mtd.	.....	W. Hodge, 1860, A. S. B.
c-g. 14 Skulls	Andaman Islands	A. S. B.
r-t. 3 Skulls	juv. Andaman Islands.	A. S. B.
n-v. 2 Skulls	Port Blair, Andamans	Major Ford, 1867.
w-x. 2 Skulls	Andamans	J. Anderson, 1872.
y. Skull	Andamans	J. Anderson, 1866.
z. Lower jaw	Preparis Island	J. Wood Mason, 1873.

Sus scrofa.

Sus scrofa, *Linnaeus Syst Nat.*, 12th ed., i, p. 103 (1766); *Gray P. Z. S.*, 1868, p. 30; *Blanford Persia*, p. 86; *Severtzoff Ann. Mag. N. H.* (4), xviii, p. 387; *Danford and Alston P. Z. S.*, 1877, p. 275; *Thomas Linn, Trans.* (2), v, p. 62; *Radde. Zool. J. B.*, iv, p. 1068.

Sus scrofa var. *nigripes*, *Blanford J. A. S. B.*, xlv, p. 112 (1875); *id. Yarkand Mamm.*, p. 79.

The Wild Boar.

Distribution.—Europe and North Africa, Asia Minor (Danford), Persia (Blanford), and Northern Asia generally.

a. Skull	Europe	Hungarian Museum, A.S.B.
b. Skull and skin.	♂ Thian Shan Mts.	F. Stoliczka, 1874.
c. Skull and skin.	♀ Thian Shan Mts (Capt. Chapman.)	F. Stoliczka, 1874.

[Types of *Sus scrofa* var. *nigripes*, Blanford.]

Genus PORCULA.

Porcula, *Hodgson J. A. S. B.*, xvi, pt. i, p. 423 (1847).

Porcula salvania.

Porcula salvania, *Hodgson J. A. S. B.*, xvi, pt. i, pp. 423, 593, pls. xii, xiii (1847); *id. P. Z. S.*, 1847, p. 115; *Horsfield P. Z. S.*, 1853, p. 192 pl. xxxvii; *Ferdon Mamm.*, p. 244; *Gray P. Z. S.*, 1868, p. 33; *Anderson P. Z. S.*, 1869, p. 470; *P. L. Sclater P. Z. S.*, 1882, p. 546, pl. xxxvii.

The Pigmy Hog; Chota suwar, Hindus; Sano banel of Nepalese.

Distribution.—Confined to the Terai at the base of the Himalayas from Nepal, probably to Assam, but is apparently rare.

a. Stuffed and skull.	♂	Darjeeling terai, 19-5-70.	J. Anderson.
b. Stuffed		Darjeeling terai, 28-9-69.	J. Anderson.
c. Skeleton mtd.	♀	Bhutan terai	Zoological Gardens, 1882.
d.-e. 2 skins		Darjeeling terai, 19-5-70	J. Anderson.
f. Skin		Neora Kananti Douars	F. A. Möller, 1883.
g. Skin		Dam Dim, Douars	F. A. Möller, 1883.
h. Skin		.....	No history.
j. Skeleton	♀	.....	Zoological Gardens, 1883.
k. Skeleton	♂	Dam Dim, Douars	F. A. Möller, 1883.
	juv.		
l. Skeleton	♀	.....	Zoological Gardens, 1883.
m. Skeleton	♂	.....	Zoological Gardens, 1883.
n. Skull pt.	?	Sikkim Terai (Hodgson)	India Mus., London.

Genus BABIRUSSA.

Babirussa, *Lesson Man. Mamm.*, p. 337 (1827).

Babirussa alfurus.

Sus babirussa, *Linnaeus Syst. Nat.*, 12th ed., i, p. 104 (1766).

Babirussa alfurus, *Lesson Man. Mamm.*, p. 338 (1827); *P. L. Sclater P. Z. S.*, 1860, p. 443, pl. lxxxiii; *Blyth Cat.*, p. 142; *Gray P. Z. S.*, 1868, p. 43.

Distribution.—Celebes and Borneo.

a. Skin and ♀ skeleton	.....	Zoological Gardens, 1885.
b.-c. 2 skulls	♂ Amboyna?	A.S.B.

Genus DICOTYLES.

Dicotyles, *G. Cuvier Regne Anim.*, 1st ed., i, p. 237 (1817).

Dicotyles tajacu.

Sus tajacu, *Linnaeus Syst. Nat.*, 12th ed., i, p. 103 (1766).

Dicotyles torquatus, *G. Cuvier Regne Anim.*, 1st ed., i, p. 237 (1817); *Baird N. Amer. Mamm.*, p. 627*.

Dicotyles tajacu, *P. L. Sclater List Vert. An. Zool. Soc.*, 1st ed., p. 19 (1862)*; *Alston Biol. Centr. Amer. Mamm.*, p. 107.

The Peccary.

Distribution.—North America from the Red River of Arkansas, southwards through Central and Southern America to Patagonia.

a. Skin	♂	Nuces valley, Texas	J. H. Garnier [Ex.]
		U. S. A., 9-3-84.	

- b. Skin juv. Noces valley, Texas, J. H. Garnier [Ex.]
 U. S. A., 9-3-84.
 c. Skull South America E. Blyth, 1865, A.S.B.

Genus PHACOCHÆRUS.

Phacochærus, *G. Cuvier Regne Anim.* 1st ed., i, p. 236 (1817).

Phacochærus æthiopicus.

- Aper æthiopicus, *Pallas Spic. Zool.*, ii, p. 2 (1767).
 Sus æthiopicus, *Linnaeus Syst. Nat.*, 12th ed., iii, p. 223 (1768).
 Phacochærus æthiopicus, *F. Cuvier Mem. Mus. Paris*, viii, p. 450, pl. xxii (1822); *P. L. Sclater P. Z. S.*, 1850, p. 78, pl. xvii; *Blyth Cat.*, p. 139.
 Phacochærus pallasi, *van der Hoeven Nova Acta Acad. Leop. Caro.*, xix ii, p. 171 (1839).

Distribution.—South Africa.

- a. Skull impf. ♂ Port Natal W. S. Sherwill (1843),
 b. Tusk. A.S.B.

Phacochærus africanus.

- Sus africanus, *Gmelin Syst. Nat.*, i, p. 220 (1788).
 Phacochærus æliani, *Cretzschmar Rüppel's Atlas*, p. 61, pls. xxv, xxvi (1826);
Blanford Abyssinia, p. 241; *P. L. Sclater P. Z. S.*, 1869, p. 276, pl. xx; id.
ibid., 1871, p. 236.
 Phacochærus haroja, *Hempr. and Ehr. Symb. Phys.*, pl. xx (1832).
 Phacochærus sclateri, *Gray Ann. Mag. N. H.* (4), vi, pp. 189, 263 (1870);
P. L. Sclater Ann. Mag. N. H. (4), vi, p. 404.

Distribution.—Africa south of the Sahara generally.

- a-b. 2 skulls ♂ Abyssinia, 28-6-68 W. T. Blanford.

Genus HIPPOPOTAMUS.

Hippopotamus, *Linnaeus Syst. Nat.*, 12th ed., i, p. 101 (1766).

Hippopotamus amphibius.

- Hippopotamus amphibius, *Linnaeus Syst. Nat.*, 12th ed., i, p. 101 (1766).
 Hippopotamus capensis, *Desmoulins Journal de Physique*, v, p. 354 (1826)*; *Blyth Cat.*, p. 142.
 Hippopotamus senegalensis, *Desmoulins Journal de Physique*, v, p. 354 (1826)*.

- a. Skin ♂ juv. Zoological Gardens, 1887.
 skeleton.
 b. Skull ♀ N. Wallich, 1844, A.S.B.
 c. Skull impf. ♂ W. S. Sherwill, 1843, A.S.B.
 d. 7 teeth W. S. Sherwill, A.S.B.
 e. Lower tusk ♂ No history, A.S.B.

Genus **TAPIRUS**.

Tapirus, *G. Cuvier Tab. Element de l'Hist. Nat.*, p. 152 (1798)*.
Rhinocœrus, *Wagler Syst. Amphib.*, p. 17 (1830).

Tapirus indicus.

"*Tapir of Malacca*," *Farquhar, Diard and Siddons, As. Res.*, xiii, p. 417.
Tapirus indicus, *G. Cuvier Rapport trav. l'Institut* (1818)*; *Desmarest N. Dict. d'Hist. Nat.*, xxxii, p. 458.
Tapirus sumatranus, *Gray Med. Repos.* (1821)*.
Tapirus malayanus, *Raffles Linn. Trans.*, xiii, p. 270 (1822); *Horsfield Zool. Res.* with plates; *Cantor J.A.S.B.*, xv, p. 263; *Blyth Cat.*, p. 135; *id. J. A. S. B.*, xlv, *Burma List*, p. 49.
Tapirus bicolor, *Wagner Schreb. Säugeth.*, vi, p. 400 (1835).
Rhinocœrus sumatranus, *Gray P.Z.S.*, p. 884 (1867).

Distribution.—In Tenasserim from the latitude of Yè southwards through the Malay peninsula; Sumatra. It is also said to occur in Borneo and Southern China, but this is very doubtful.

a. Skeleton	♂	.....	W. Rutledge, 1874.
b. Skeleton	♂	.....	W. Rutledge, 1874.
c. Skeleton	♀ juv.	.....	Zoological Gardens, 1876.
d. Skeleton,	♂	.....	W. Rutledge, 1879.
skin.			
e. Skeleton	♀ juv.	.....	Purchased, 1879.
f. Skeleton	♀	.....	Zoological Gardens, 1881.
g. Skeleton	♂	.....	Babu H. M. Roy, 1885.
h. Stuffed	♀	.....	J. Agabeg, 1844, A.S.B.
i. Skeleton mtd.	♀	.....	W. Rutledge, 1874.
k. Skull	♂ Malacca		W. Farquhar, 1820, A.S.B.
l. Skull	juv.	.....	Dr. McCosn, 1837, A.S.B.
m. Skin and skull	Malacca		E. Lindstedt, 1848, A.S.B.
impf. feet.			

Genus **EQUUS**.

Equus, *Linnaeus Syst. Nat.*, 12th ed., i, p. 100 (1766).
Asinus, *Gray Ann. Philos.*, xxvi, p. 337 (1825)*.

The two Indian wild asses, the Kiang of Thibet and the Ghor-khur of Cutch, resemble each other very closely, and there does not seem to be, judging either by the descriptions published of the two animals or by examination of the few skulls in the Museum, any real distinction between the two. For convenience however, the synonymy of the two forms has been separated under the headings of *Equus hæmionus* var. *indicus* and *E. hæmionus* var. *kiang*.

Equus hemionus.

Var. A.—typicus.

"*Onager*," *Pallas Act. Acad. Petrop.*, 1777, pt. 2, p. 258, pls. xi, xii.

Equus hemionus, *Pallas Nov. Comm. Acad. Petrop.*, xix, p. 394, pl. vii, (1775); *Radde Ost Siberien*, i, p. 293; *Severtzoff Ann. Mag. N. H.*, (4), xviii, p. 387; *Thomas Linn. Trans.* (2), v, p. 61; *Radde Zool. J. B.*, p. 1057.

Var. B.—indicus.

Equus hemionus, *F. Cuvier Hist. Nat. Mamm.* (1823); *Is. Geoffr. St. Hil. Ann. Mus. Paris*, iv, p. 77, pl. viii*; *Sykes P. Z. S.*, 1837, p. 91; *Hutton and Blyth J. A. S. B.*, xv, p. 145; *Gray P. Z. S.*, 1849, p. 29; *Blyth J. A. S. B.*, xxvi, p. 239; *Blanford Persia*, p. 84.

Asinus onager, *Gray Cat. Mamm. B. M.*, iii, p. 269 (1852); *Murray Zool. Sind* p. 54.

Equus onager, *Blyth J. A. S. B.*, xxviii, p. 229; *id.*, *Cat.*, p. 135; *Ferdon Mamm.*, p. 236; *Stoliczka J. A. S. B.*, xli, p. 228; *Sterndale Mamm. Ind.*, p. 399.

Asinus indicus, *P. L. Sclater P. Z. S.*, p. 163 (1862).

Var. C.—kiang.

Equus kiang, *Moorcroft's Travels*, i, p. 312 (1841); *Hodgson J. A. S. B.*, xi, p. 286; *Gray P. Z. S.*, 1849, p. 29; *Hay P. Z. S.*, 1859, p. 353, pl. lxxiii; *Kinloch Large Game Shooting*, i, p. 13.

Asinus polyodon, *Hodgson Calc. Journ. N. H.*, vii, p. 469, pl. vi (1847); *id. ibid*, viii, p. 98.

Equus hemionus, *Walker J. A. S. B.*, xvii, pt. ii, p. 1, pl. i (1848); *Gray Cat. Mamm. B. M.*, iii, p. 272; *Cunningham Ladak*, p. 195, pl. vi; *Blyth J. A. S. B.*, xxviii, p. 229; *Strachey J. A. S. B.*, xxix, p. 136; *Blyth Cat.*, p. 136; *Sterndale Mamm. Ind.*, p. 401.

Asinus hemionus, *Adams P. Z. S.*, 1858, p. 531; *P. L. Sclater, P. Z. S.*, 1862, p. 163.

The Wild Ass; Kiang of Thibet; Ghorkhur, Hindustani; Ghour, Persia.

Distribution.—The typical variety originally described by Pallas is found all over the Southern Siberian steppes and was got by Radde from the Trans-baikal province, and also in the Trans-caspian region.

The Kiang is found plentifully in Western Thibet, extending over the Cashmir frontier in the upper valley of the Indus.

The Ghorkhur (*var. indicus*) is found in Cutch and Rajpootana, west of Long. 75°, and extends through Afghanistan and Beluchistan to Persia, and is finally replaced by a fourth sub-species from which it is barely distinguishable, *E. hemippus* of Geoffroy.

Var. B.—indicus.

a. Skull	Kandahar	H. B. Lumsden, 1859, A.S.B.
b. Skull	.....	W. T. Blanford, 1882.
c. Skull, ske- ♂ leton, skin.	.....	Zoological Gardens, 1877.
d. Skull, ske- ♀ leton.	.....	Zoological Gardens, 1877.
e. Skull, ske- ♂ leton.	.....	Zoological Gardens, 1878.

Var. C.—kiang.

a. Stuffed	Thibet	A. Campbell, A.S.B.
b. Stuffed juv.	Thibet	A. Campbell, A.S.B.
c. Skeleton	Thibet	.....
mtd.		
d. Skull	Thibet	G. T. Lushington (1838), A.S.B.
e. Skeleton	.....	No history, A.S.B.
impft.		

Equus burchelli.

Asinus burchellii, *Gray Zool. Journ.*, i. p. 247, pl. ix (1825); *P. L. Sclater P. Z. S.*, 1865, pl. xxii.
Equus zebroides, *Lesson Man. Mamm.*, p. 346 (1827).

Burchell's Zebra.

Distribution.—South Africa, extending northwards to the Kili-manjaro district.

a. Stuffed	.....	W. Rutledge, 1884.
b. Skeleton ♂ and skin.	.....	Babu H. M. Roy, 1883.

Equus asinus.

Equus asinus, *Linnaeus Syst. Nat.*, 12th ed., i. p. 100 (1766); *Blyth Cat.*, p. 135.
Asinus vulgaris, *Gray Zool. Journ.*, i, p. 244 (1825).

The Ass.

Distribution.—Cosmopolitan in a domestic state.

a. Stuffed	♀	.....	J. Anderson, 1867, A.S.B.
b. Skull	[Indian domestic race.]		.....
c. Skull and ♀ skeleton impf.		.....	Zoological Gardens, 1879.

Equus caballus.

Equus caballus, *Linnaeus Syst. Nat.*, 12th ed., i, p. 100 (1766); *Blyth Cat.*, p. 135.

The Horse.

Distribution.—Cosmopolitan in a domestic state; a closely allied truly feral form (*Equus przewalskii*) has been recently discovered by Przewalsky in the deserts of Central Asia and has been described by Poliakov, of whose paper a translation will be found in the *Ann. Mag. N. H.* (5), viii, p. 16.

a-g. 7 Skulls	.....	No history, A.S.B.
h. Skull, skele- ton.	.....	Messrs. T. Smith & Co., 1866.

j.	Skull, skeleton.	[Burma pony]	1866.
k.	Skull, skeleton.	♀ [Arab, gray]	Sir J. Fayrer, 1872.
l.	Skull	[Pony "Lucknow"]	Sir J. Fayrer.
m.	Skull	♀ [Iceland pony]	W. Rutledge, 1870.
n.	Skull	juv.	A.S.B.
o.	Skull, skeleton.	♂ [Waler Roan pony]	Rajah R. Mullick, 1876.
p.	Skull		A.S.B.
q.	Skull, skeleton and skin.	♀ [Shetland pony]	W. Rutledge, 1872.
r.	Feet of an Arab with extra toes.	.....	Purchased, 1870.
s.	Skeleton mtd.	♂ [Waler Gelding]	W. King 1888.

Genus RHINOCEROS.

Rhinoceros, *Linnaeus Syst. Nat.*, 12th ed., i, p. 104 (1766).

Ceratorhinus, *Gray P Z.S.*, p. 1021 (1867). *Type* *R. sumatrensis*.

Key of the Indian Species.

a. With one horn only, skull with the post-tympanic and post-glenoid processes of the squamosal bone united for a considerable extent below the meatus auditorius.

b. Upper lip rounded off; the posterior neck-fold does not unite with the anterior one to form a saddle; skull with the vomer ankylosed to the skull, and with basi-sphenoid and basi-occipital bones wide and flattened.

R. unicornis, p. 202.

b². Upper lip produced into a short proboscis; the posterior neck-fold unites with the anterior one to form a saddle on the neck; skull with the vomer ending freely posteriorly in a jagged point frequently broken off; the basi-sphenoid and basi-occipital very much narrowed and steep at the sides; an ossified mesethmoid present.

R. sondaicus, p. 202.

a². With two horns, skull with the post-tympanic and post-glenoid processes of the squamosal separated so as to form an open groove.

c. Ears hairy inside; no long fringe of hairs along the ear conch; skull narrow and tooth row short.

R. sumatrensis, p. 204.

c². Ears not hairy inside, a long fringe of hairs along the edge of the ear conch; skull broader and with a longer tooth row.

R. lasiotis, p. 204.

Rhinoceros unicornis.

- Rhinoceros unicornis*, *Linnaeus Syst. Nat.*, 12th ed., i, p. 104 (1766); *Gray P. Z. S.*, p. 1010 (1867); *P. L. Sclater Trans. Zool. Soc.*, ix, p. 645, pl. xcv; *Flower P. Z. S.*, 1876, p. 454.
Rhinoceros indicus *G. Cuvier Menagerie du Mus. Hist. Nat.* (1801)*; *Blyth J. A. S. B.*, xxx, p. 194; id. *J. A. S. B.*, xxxi, p. 151; id. *Cat.*, p. 136; *Jerdon Mamm.*, p. 232, *Lydekker J. A. S. B.*, xlix, p. 135; *Sterndale Mamm. Ind.*, p. 407.
Rhinoceros asiaticus, *Blumenbach Handb. Naturg.*, 12th ed., p. 107 (1830).
Rhinoceros stenocephalus, *Gray P. Z. S.*, p. 1018 (1867).

The Indian Rhinoceros; Genda or Gonda, Hind.; Gor in Assam.

Distribution.—The Terai and country between the Himalayas and the Ganges; from Rohilkund (Jerdon) in the west to Assam; it was formerly plentiful in the Purneah district, but now seems to be almost confined to the Doars to the east of the Teesta River.

- | | | |
|---------------------------------|--------------------|-----------------------------------|
| a. Stuffed and ♂ bones of feet. | Purneah dist. | G. W. Shillingford, 1871. |
| b. Skeleton ♀ mtd. | "Barrackpore Park" | Medical College Mus. [Ex.], 1879. |
| c. Skull, skeleton incomplete. | Gauhati, Assam | F. T. Pollok, 1870. |
| d. Skull skele- ♀ ton. | ..... | Zoological Gardens, 1880. |
| e. Skull skele- ♀ ton. | ..... | Rajah of Kuch Behar, 1879. |
| f. Skull | ..... | A.S.B. |
| g. Skull | ..... | A.S.B. |
| h. Skull ♂ | Nepal Terai | Sir E. Baring, 1875. |
| j. Skull | Nepal Terai | Sir E. Baring, 1875. |
| k. Skull | ..... | No history. |
| l. Skull | ..... | Rajah R. Mullick, 1871. |
| m. Skull | ..... | W. T. Blanford, 1879. |
| n. Skull | ..... | A.S.B. |
| o. Skull | ..... | A.S.B. |
| p. Skull | Gauhati, Assam | Mus Coll., 1868. |
| q. 3 Hoofs | Nepal Terai | J. Anderson, 1880. |
| r. Stuffed juv. and skele- ton. | ..... | A.S.B. |

Rhinoceros sondaicus.

- Rhinoceros sondaicus*, *Desmarest Mamm.*, ii, p. 399 (1822); *Horsfield Zool. Res.*, with plate; *Müller and Schlegel, Tem. Verhandl.*, p. 184, pl. xxxiii; *Blyth J. A. S. B.*, xxxi, p. 151; id. *Cat.*, p. 137; *Jerdon Mamm.*, p. 234; *P. L. Sclater, P. Z. S.*, 1874, p. 182, pl. xxviii; *Friaser J. A. S. B.*, xlv, p. 10, pl. v; *P. L. Sclater Trans. Zool. Soc.*, ix, p. 649, pl. xcvi; *Flower P. Z. S.*, 1876, p. 454; *Blyth J. A. S. B.*, xlv, *Burma List*, p. 50; *Rainey P. A. S. B.*, 1878, p. 139; *Sterndale Mamm. Ind.*, p. 410.
Rhinoceros javanicus *F. Cuvier Hist. Nat. Mamm.*, livr. 45, with plate (1824); *Gray P. Z. S.*, p. 1009 (1867).

Rhinoceros floweri, Gray P. Z. S., p. 1015 (1867).
Rhinoceros nasalis, Gray P. Z. S., p. 1012 (1867).

The Sondaic Rhinoceros.

Distribution.—The Sunderbunds and formerly the Rajmahal hills in Bengal; Assam, south of the Brahmaputra and Burma, extending southwards through Tenasserim and the Malay peninsula to Sumatra, Java and Borneo.

The comparison of the very fine collection of skulls in the list below, shows that there is no discernable distinction between the Sondaic Rhinoceros of the Sunderbunds, of Tenasserim, and of Java; the skull from Java, though very aged, shows no points of distinction from that of the Sunderbunds. The ossified mesethmoid (*c. f.* Fraser J. A. S. B., xlv, p. 10) is present in only two of the skulls in the collection; in one or two others, however, there are traces of where it should have been, but it has evidently dropped off in the cleaning of the skull; there can be little doubt that it will be found in all carefully cleaned skulls.

The mesethmoid does not appear ever to be ossified in *Rhinoceros unicornis*.

The large stuffed female "a" in the list below shows no trace of a horn, whether this is a constant characteristic of the female of this species or not, it is impossible to state without further evidence; several people, however, who have seen this species alive, confirm this; Blyth asserted that there was no sexual differences in *R. unicornis* and *R. sondaicus*; if therefore the female of *R. sondaicus* has no horn this is not correct.

a. Stuffed, ske- ♀ Sunderbunds	O. L. Fraser and J. F. Barck-
leton.	ley, 1874.
b. Stuffed, ♀ juv. Sunderbunds	J. F. Barckley, 1872.
skeleton.	
c. Skeleton ♀ Jessore dist.	J. H. Barlow, 1834, A.S.B.
d. Skeleton ♂	Babu H. M. Roy, 1884.
e. Skeleton, ♂ juv.	Purchased, 1880.
skin.	
f. Skeleton, ♀ juv.	W. Rutledge, 1881.
skin.	
g. Skeleton, ♂ juv.	W. Rutledge, 1879.
skin.	
h. Skeleton, ♀ juv.	W. Rutledge, 1880.
skin.	
i. Skull ♂ juv.	W. Rutledge, 1875.
k. Skin ♂ juv.	No history.
l. Skull	N. Wallich, A.S.B.
m. Skull Tenasserim	Sir T. H. Maddock, 1842,
	A.S.B.
n. Skull Tavoy Point	Genl. Fytche, 1861, A.S.B.
o. Skull	A.S.B.
p. Skull Java	Batavian Soc., 1846, A.S.B.
q. Skull Sunderbunds	W. W. Shepperd, 1867.
r. Skull ♂ juv.	Zoological Gardens.

s. Skull and feet bones.	♂ Matabangah R., Sunderbunds. Purchased, 1875.
t. Skull	♀ Chillochang Creek, Sunderbunds. Capt. Charling.
u. Skelétón	..... No history (1869).
v. Lower jaw	..... No history.
w. Lower jaw	..... No history.

Rhinoceros lasiotis.

♂ *Rhinoceros crossii*, Gray *P. Z. S.*, p. 250 (1854); *Blyth P. Z. S.*, p. 306 (1861).

Rhinoceros sumatrensis, *apud Anderson P. Z. S.*, p. 129 (1872).

Rhinoceros lasiotis, *P. L. Sclater P. Z. S.*, pp. 493, 791, pl. xxiii (1872); *id. P. Z. S.*, 1875, p. 566; *id. Ann. Mag. N. H.* (4), x, p. 299; *id. Trans. Zool. Soc.*, ix, p. 652, pl. xcvi; *Flower P. Z. S.*, 1876, p. 455; *id. P. Z. S.*, 1878, p. 634.

Rhinoceros sumatranus, *apud Gray Ann. Mag. N. H.* (4), x, p. 208 (1872).

♀ *Ceratorhinus crossii*, *Blyth J. A. S. B.*, xlv, *Burma List*, p. 51 (1875)

The Hairy-eared Rhinoceros.

Distribution.—The Chittagong and Tipperah Hills; this species is replaced by the next in the Malay peninsula and the line of division between the two is not actually made out, but probably this species will be found to be the one distributed all over Burma.

[No specimen in the Museum.]

Rhinoceros sumatrensis.

"Double-horned Rhinoceros of Sumatra," *Bell Phil. Trans.*, p. 3, pls. ii, iii, iv (1793).

Rhinoceros sumatrensis, *Cuvier Regne An.*, i, 1st ed., p. 240 (1817); *P. L. Sclater P. Z. S.*, 1872, p. 790, pl. lxvii; *Bartlett P. Z. S.*, 1873, p. 104, pl. xi; *P. L. Sclater. Trans. Zool. Soc.*, ix, p. 650, pl. xcvi.

Rhinoceros sumatranus, *Raffles Linn. Trans.*, xiii, p. 268 (1822); *Müller and Schlegel Tem. Verhandl.*, p. 190, pl. xxxiv; *Blyth J. A. S. B.*, xxxi, p. 151; *id. Cat.* p. 137.

Rhinoceros sondaicus, *apud F. Cuvier Hist. Nat. Mamm. livr.* 47, with plate (1825).

Ceratorhinus sumatranus, *Gray P. Z. S.*, p. 1021 (1867); *id. Ann. Mag. N. H.* (4), xi, p. 357.

Ceratorhinus crossii, *Gray Ann. Mag. N. H.* (4), x, p. 209 (1872).

Ceratorhinus sumatrensis, *Garrod P. Z. S.*, p. 92 (1873); *Flower P. Z. S.*, 1876, p. 455; *Blyth J. A. S. B.*, xlv, *Burma List*, p. 52; *Flower P. Z. S.*, 1880, p. 69.

Ceratorhinus niger, *Gray Ann. Mag. N. H.* (4), xi, p. 357.

Ceratorhinus blythii, *Gray Ann. Mag. N. H.* (4), xi, p. 360.

The Two-horned Rhinoceros.

Distribution.—The Malay peninsula and South Tenasserim?; the islands of Sumatra, Java and Borneo.

The skulls of the two-horned Rhinoceros in the Museum do not show any very appreciable variation with the exception of two formerly in the collection of the Asiatic Society; these two skulls,

however, have no recorded history and it is, therefore, impossible to say whence they came.

One of these skulls is remarkable for being much broader than all the others; the other, which, although narrower than the first, is still broader than all the others, is more remarkable still for the extreme length of the tooth row.

As these are the differences specially pointed out by Prof. Flower (P. Z. S., 1878, p. 634) between the Tipperah skull which was supposed to have belonged to an example *R. lasiotis* and the typical Sumatran skulls, it seems probable that these two skulls may also be referable to *R. lasiotis*.

a. Stuffed and ♀ "Singapore" skull.	W. Rutledge, 1875.
b. Skeleton ♀ Malacca mtd.	Purchased, 1875.
c. Skin, skele- ♀ ton.	W. Rutledge, 1879.
d. Skeleton ♂ juv. Malacca	Purchased, 1875.
e. Skeleton impt.)	Zoological Gardens, 1889.
f. Skeleton (skull Malacca impt.)	Dr. Maingay, 1867.
g. Skull (with ♂ Tenasserim limb bones).	E. O'Reilly, 1847, A.S.B.
h. Skull ♂ Tenasserim	Sir T. H. Maddock, 1842, A.S.B.
j. Skull Tenasserim	Sir T. H. Maddock, 1842, A.S.B.
k. Skull l. Skull m. Skull n. Skull o. Skin, skull ♀ "Singapore" juv.	No history, A.S.B. No history, A.S.B. No history. No history. W. Rutledge, 1885.
p. Pt. of skull Upper Martaban	E. Blyth, 1861, A.S.B.
q. Nasal bones Sumatra ?	Miss Lloyd, A.S.B.
r. Two horns Akyab attached.	Sir P. Sladen, 1877.
s. Skeleton	Zoological Gardens (1889).

Rhinoceros bicornis.

Rhinoceros unicornis, var. *bicornis*, *Linnaeus Syst. Nat.*, 12th ed., i, p. 104 (1766).

Rhinoceros bicornis, *Gmelin Syst. Nat.*, i, p. 57 (1788); *P. L. Sclater Trans. Zool. Soc.*, ix, p. 655, pl. xcix; *Selous P. Z. S.* 1881, p. 725.

Rhinoceros africanus, *Desmarest Mamm.*, p. 400 (1820); *Blyth Cat.*, p. 138.

Rhinoceros keitloa, *A. Smith S. African Zool.*, pl. i (1849); *Blanford Abyssinia*, p. 243.

Distribution.—South Africa, extending northwards to Abyssinia.

a-b. 2 Anterior horns	W. S. Sherwill, 1843, A.S.B.
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Rhinoceros simus.

Rhinoceros simus, *Burchell Bull. Soc. Philom.*, p. 96 (1817)*; *A. Smith S. African Zool.*, pl. xix; *Blyth Cat.*, p. 138; *Selous P. Z. S.*, 1881, p. 725, pl. lxii.

Distribution.—South Africa.

a. Anterior horn

.....

W. S. Sherwill, 1843,
A. S. B.

Order PROBOSCIDEA.

Animals of large size provided with a long flexible proboscis with finger-like prehensile tip; no clavicles; radius and ulna permanently crossed; tibia and fibula complete; hind-legs pillar-like, femur vertical when standing; manus and pes each consisting of five digits united but separately hoofed; in the skull the jugal bones form the middle of the zygoma only; nasals very short; large and extensive frontal sinus present; tusks are permanent incisors with persistent pulps, but with no enamel; placenta deciduate and zonary.

Genus ELEPHAS.

Elephas, *Linnaeus Syst. Nat.*, 12th ed., i, p. 48 (1766).

Elephas indicus.

Elephas indicus, *Linnaeus Mus. Frid. Adolph.*, i, p. 11 (1754)*; *Cuvier Tab. Element d'Hist. Nat.*, p. 148 (1798)*; *Corse As. Res.*, iii, p. 29; *Elliot Madr. Journ.*, x, p. 219; *Blyth Cat.*, p. 134; *Ferdon Mamm.*, p. 229; *Johnstone P. A. S. B.*, 1868, p. 127.

Elephas maximus, *Linnaeus Syst. Nat.*, 12th ed, i, p. 48 (1766) [pt.]

Elephas asiaticus, *Blumenbach Handbuch der Naturges.*, 12th ed., p. 106 (1830).

The Indian Elephant; Hasti or Gaja, Sanscrit; Gaj, Bengali; Hati, Hind.; Ani in South India; Allia, Cingalese; Shanb, Burmese.

Distribution.—The peninsula of India, especially the Western Ghats; the Terai region of the Himalayas, Assam, Cachar, Burma and Siam, extending southwards to the Malay peninsula. In Ceylon and Sumatra elephants are also found, but it seems doubtful whether they are a distinct species or not.

Professor Schlegel in a paper published in the Academy of Sciences of Holland (*Verslagen en Med. der Koninkl. Acad. van Vetens. Afd. Natuurkunde*, 1861, p. 101) a translation of which appeared in the *Natural History Review*, II, p. 72, 1862, has pointed out the distinctions between the true Indian Elephant and that inhabiting the Islands of Ceylon and Sumatra.

The differences seem to resolve themselves into the two following points of distinction: the laminæ of the molar teeth are wider in *E. sumatranus* and approach those of *E. africanus*; there are in *E. sumatranus* 20 dorsal vertebræ and 19 pairs of ribs, while in *E. indicus* the numbers are respectively 19 and 18.

With regard to the size of Elephants, Sanderson has maintained both in his book "Thirteen Years among the Wild Beasts" and elsewhere that no elephant has ever exceeded 11 feet when measured in the ordinary way at the shoulder.

The largest ever measured by Sanderson, who has certainly had vast experience, was one belonging to the Sirmoor Rajah, which was 10 feet $7\frac{1}{2}$ inches at the shoulder.

The elephant, whose skeleton is mounted in the Museum Gallery ("a" in the list) certainly exceeds this limit; a plumb line dropped from a bar placed on the anterior dorsal vertebræ just above the scapulæ makes him no less than 11 feet 3 inches, so that in life he must have measured several inches more.

Flower mentions in his "Catalogue of the Osteological Specimens in the Royal College of Surgeons," Part II, Mammalia, p. 443, a very large femur and humerus, measuring respectively 112 c.m. and 90 c.m., which is roughly equal to 43 and 35 inches; the femur and humerus of the large elephant "a" in the list measure respectively $47\frac{3}{4}$ and 39 inches.

a. Skeleton mtd.	♂	Bilkandi, Sonthal Pergunnahs.	W. M. Smith, 1870.
b. Skeleton mtd.	♂	.....	King of Oude, 1839, A.S.B.
c. Stuffed, skeleton	juv.	.....	Commissariat Department, 1877.
d. Skeleton, skull.	♂	Garó Hills	Purchased, 1877.
e. Skeleton	♂	.....	W. Rutledge, 1874.
f. Skeleton, skin.	♂	.....	W. Rutledge, 1881.
g. Skeleton, imft.	♂	.....	G. P. Sanderson [Ex.], 1881.
h. Skin, skull	♂	.....	Zoological Gardens, 1877.
j. Skin	♂	Tikri Killah, Garó Hills.	G. P. Sanderson, 1886.
k. Skull	♀ juv.	.. ..	W. Rutledge, 1874.
l. Skull	♂ juv.	.....	G. P. Sanderson, 1885.
m. Skull	♂ juv.	.....	G. P. Sanderson, 1885.
n. Skull, skeleton juv.	♂	.....	W. Rutledge, 1876.
o. Skull foetal		.....	Capt. Johnstone, 1868.
p. Split skull		.....	A.S.B.
q-r. 2 Tusks		.....	General Bhima Sinha, 1836, A.S.B.
s. Tusk	♂	.....	R. Home, A.S.B.

<i>t.</i> Tusk (gnawed by Porcupines)	.....	H. B. Medlicott, 1878.
<i>u-x.</i> 4 Tusks ♂	.....	Capt. Johnstone, 1868.
<i>y.</i> Tusk ♀	.....	A.S.B.
<i>z.</i> Milk tusk	.....	A.S.B.
<i>a².</i> Tusk	Garro Hills	G. P. Sanderson, 1879.
<i>b².</i> Pr. of tusks (Mukna) ♂	.....	A. J. Shillingford, 1888.
<i>c².</i> Concretion in tusk.	.....	A.S.B.
<i>d².</i> Pt. of tusk with rifle ball imbedded.	.....	A.S.B.
<i>e².</i> Several molar teeth.	.. ..	No history.
<i>f²-g².</i> 2 Molars	Kapatakshi R., Koolna dist.	Babu S. Banerjee, 1888.
<i>h².</i> Molar teeth of a foetal specimen.	.. ..	No history.

Elephas africanus.

Elephas maximus Linnæus *Syst. Nat.*, 12th ed., i, p. 48 (1766) [pt.]
Elephas africanus, Blumenbach *Handb. der Naturges.* (1779)*; *Blanford Abyssinia*, p. 258.
Elophas capensis, G. Cuvier *Tabl. Element. d' Hist. Nat.*, p. 142 (1798)*.

Distribution.—Africa generally, south of the Sahara.

<i>a.</i> Skeleton ♂	.....	W. Rutledge, 1883.
<i>b.</i> Skull juv.	Kokai, Lebka valley Abyssinia.	W. T. Blanford, 1867.
<i>c.</i> Tusk	Abyssinia	W. T. Blanford, 1867.
<i>d.</i> 4 Molars	.....	No history, A.S.B.

Order HYRACOIDEA.

There are no representatives of this order in the Indian Region, so no definition is given.

Genus HYRAX.

Hyrax, Hermann *Tab. Affinit. Anim.*, p. 115 (1783).

Hyrax capensis.

Cavia capensis, Pallas *Spic. Zool.*, ii, p. 16 (1767).

Hyrax capensis, Hermann *Tab. Affinit. Anim.*, p. 115 (1783); *Blyth Cat.* p. 138.

Distribution.—South Africa.

a-b.	Stuffed, ♂ & ♀	.....	W. S. Sherwill, A.S.B.
c-d.	Stuffed juv.	.....	W. S. Sherwill, A.S.B.
e.	Skull	Spitz-koff Mt., S. Africa.	W. S. Sherwill, A.S.B.
f.	Skull	.....	W. S. Sherwill, A.S.B.
g.	Skull juv.	.....	W. S. Sherwill, A.S.B.
h.	Skin	.....	No history, A.S.B.

Hyrax brucei.

Hyrax brucei, *Gray Ann. Mag. N. H.*, (4), i, p. 44 (1868); *Blanford P. Z. S.*, 1869, p. 642; id. *Abyssinia*, p. 252.

Hyrax alpinus, *Gray Ann. Mag. N. H.*, (4), i, p. 45 (1868).

Hyrax ferrugineus et irroratus, *Gray Ann. Mag. N. H.* (4), iii, p. 242 (1869).

Distribution.—The Abyssinian Highlands.

a.	Skin	♀	Adigrat, Abyssinia, 8,000 ft., 26-4-68.	W. T. Blanford.
b.	Skin		Anseba valley, Abyssinia, 4,000 ft, 7-68.	W. T. Blanford.
c.	Skull		Abyssinia	W. T. Blanford, 1868.
d.	Skeleton		Abyssinia	W. T. Blanford, 1868.
e.	Skin		Adigrat Abyssinia, 8,000 ft., 7-4-68.	W. T. Blanford.
f.	Skin		Adigrat, Abyssinia, 8,000 ft., 24-4-68.	W. T. Blanford.
g-h.	2 Skins juv.	♂ ♀	Adigrat, Abyssinia, 8,000 ft. 24-4-68.	W. T. Blanford.
j.	Skin		Abyssinia	W. T. Blanford.
ℳ k.	Skin		Somali land	J. H. Speke, 1855, A.S.B.

Order CARNIVORA.

Mammalia with hairy bodies; with clavicles incomplete or wanting; radius and ulna, tibia and fibula complete; radiale and intermedium fused; no centrale; manus and pes with five digits; thumb never opposable; terminal phalanges armed with sharp claws; skull with strong occipital ridges, wide zygomata, and generally incomplete orbital ring; nasals large and thin; glenoid cavity transversely elongated to which the mandibular condyle corresponds, thus limiting the motion of the lower jaw to a vertical movement; dentition heterodont and diphyodont; teeth simply coated with enamel, not compound; incisors $\frac{3}{3}$ generally; in some forms the last enlarged premolar of the upper jaw and the first molar of the lower have trenchant edges and act as a pair of scissors and are called the sectorials; placentation zonary.

Sub-order I. FISSIPEDIA.

Terrestrial carnivora with manus and pes rarely webbed but bearing well-developed claws; hind-limbs and tail free; pinnæ of ear well developed; incisors $\frac{3}{3}$.

Synopsis of Indian Genera.

- a. Digitigrade with retractile or partially retractile claws ; skull with the condylar foramen confluent with the foramen lacerum posterius ; the paroccipital process applied to the bulla ; mastoid process obsolete ; last upper premolar and first lower molar generally sectorial. [=Aeluroidea.]
- b. With only 2 lower premolars ; no alisphenoid canal ; bulla not externally constricted or internally divided ; metatarsus hairy. [=Felidae.]
- c. Claws completely retractile ; inner cusp of upper sectorial moderate. **Felis**, p. 212.
- c². Claws incompletely retractile ; inner cusp of upper sectorial rudimentary. **Cynaelurus**, p. 235.
- b². With 3 lower premolars ; alisphenoid canal present (except *Viverricula*) ; bulla externally constricted and internally divided ; metatarsus hairy or naked. [=Viverridae.]
- d. Claws strongly curved and more or less retractile ; bulla not posteriorly everted ; prescrotal glands present ; anus not generally opening into a sac.
- e. Tarsus and metatarsus entirely hairy ; ears never tufted.
- f. A second upper molar present.
 - g. Alisphenoid canal present. **Viverra**, p. 235.
 - g². Alisphenoid canal absent. **Viverricula**, p. 238.
 - f². No second upper molar. **Prionodon**, p. 239.
 - e². Tarsus and metatarsus half bald ; ears not tufted.
 - h. Teeth small ; hinder part of the alveolar margin of the mandible crested. **Arctogale**, p. 241.
 - h². Teeth large ; hinder border of mandible not crested. **Paradoxurus**, p. 242.
 - e³. Tarsus absolutely naked ; ears tufted ; tail prehensile. **Arctictis**, p. 249.
- d². Claws elongated, not retractile ; bulla posteriorly everted ; canines large ; no prescrotal glands ; anus opening into a sac. **Herpestes**, p. 250.

- b*³. With 3 lower premolars; no alisphenoid canal; bulla not divided or constricted, with only a rudiment of a septum; metatarsus hairy; claws blunt and not retractile.

[=Hyaenidae.]

Hyaena, p. 258.

- a*². Digitigrade, with non-retractile claws; condylar foramen distinct from the foramen lacerum posterius; paroccipital process closely applied to the bulla; clavicles rudimentary; last upper premolar and first lower molar sectorial.

[=Cynoidea.]

- h*. A sinus in the frontal bone, postorbital process large, thick and swollen and bent down at the tip.

- j*. With only two true molars in the lower jaw, *i.e.*, the lower sectorial and one other; contour of facial line convex.

Cuon, p. 260.

- j*². With a complete set of three true molars in the lower jaw; contour of the facial line generally concave.

Canis, p. 261.

- h*². No sinus in the frontal bone; skull slight and elongate; postorbital processes thin, concave above, spread out more or less horizontally.

Vulpes, p. 267.

- a*³. Plantigrade with generally non-retractile claws; skull with the condylar foramen distinct from the foramen lacerum posterius; paroccipital process widely separated from the bulla; mastoid process very large; auditory bulla not rounded or divided; no caecum.

[=Arctoidea.]

- k*. With no alisphenoid canal; molars $\frac{1}{2}$ or $\frac{1}{3}$.

[=Mustelidae.]

- l*. Kidneys simple; feet short, digitigrade partially webbed; claws short, often semi-retractile; dentition, sectorial.

- m*. Premolars four above and below; lower sectorial with an inner tubercle; habits arboreal.

Mustela, p. 273.

- m*². Premolars three above and below; lower sectorial with no inner tubercle; habits terrestrial.

Putorius, p. 276.

- l*². Kidneys simple; feet elongated; toes straight; claws non-retractile, blunt; habits terrestrial and fossorial.

- n.* First upper molar as broad as long; with pig-like snout; palate produced back, level with the glenoid surface. **Arctonyx**, p. 290.
- n*². First upper molar much broader than long.
o. External ear present; molars, p. m. $\frac{4}{4}$ m. $\frac{1}{2}$. **Helictis**, p. 284.
- o*³. No external ear; molars, p. m. $\frac{3}{3}$ m. $\frac{1}{1}$. **Mellivora**, p. 287.
- l*³. Kidneys conglomerate; feet short and rounded; toes webbed; claws small, curved and blunt; upper posterior molar large and quadrate; habits aquatic. **Lutra**, p. 291.
- k*². With an alisphenoid canal; true molars $\frac{2}{2}$ obtusely tuberculated; dentition not sectorial. **Aelurus**, p. 300.
- k*³. With an alisphenoid canal; kidneys conglomerate; true molars $\frac{2}{3}$ longer than broad; dentition not sectorial; feet completely plantigrade. [= **Ursidæ**.]
- p.* Six incisors in upper jaw; snout not much produced. **Ursus**, p. 301.
- p*². Four incisors in upper jaw; snout considerably produced. **Melursus**, p. 306.

Genus **FELIS**.

Felis, *Linnaeus Syst. Nat.*, 12th ed., i, p. 60 (1766). *Type*, *F. leo*.
Leo, *Tigris*, *Leopardus*, *Caracal*, *Chaus* et *Lynchus*, *Gray List Mamm. B. M.*, pp. 39-46 (1843). *Types*, *F. leo*, *F. tigris*, *F. leopardus*, *F. caracal*, *F. chaus* et *F. canadensis*.
Uncia, *Gray Ann. Mag. N. H.* (2), xiv, p. 394 (1854). *Type*, *F. uncia*.
Ailurina, *Gervais Hist. Nat. Mamm.*, ii, p. 87 (1855)*. *Type*, *F. planiceps*.
Neofelis, *Catolynx* et *Viverriceps*, *Gray P. Z. S.*, pp. 265-268 (1867). *Types*, *F. nebulosa*, *F. marmorata* et *F. viverrina*.
Serval, *Pyrofelis*, *Gray Ann. Mag. N. H.* (4), xiv, p. 352-4 (1874). *Types*, *F. serval*, *F. temmincki*.

Key of the Indian Species.

- a.* Cats proper with three upper premolars generally present, with a rounded ear-conch, and with a long tail.
- b.* Cats with a concolorous coat, neither spots or stripes.
- c.* Of large size; up to 10 feet in length; tail with a black brush; nasal bones short, flat and not reaching so far back as the frontal processes of the maxillae.

F. leo, p. 214

- c*². Of moderate size; colour varies from bright red to dark brown; tail short, not brushed; cheeks and forehead horizontally streaked with white and brown; faint traces of spots sometimes present on the flanks and abdomen.

F. temmincki, p. 222.

- c*³. Of small size; resembles the last, but is half the size; skull of different shape, having narrow nasals, forming a ridge as in *F. viverrina*; anterior upper premolar large and two-rooted.

F. planiceps, p. 222.

- b*². Cats of large size with vertical stripes.

F. tigris, p. 216.

- b*³. Cats with clouded fur, *i.e.*, with large spots or blotches exceeding two inches in diameter.

- d*. With very large canines, half the length of palate; ground colour pale yellow to gray, clouded with black not spotted; tail very long and thick; of large size measuring 2 feet 2 inches to 3 feet 10 inches; skull long and narrow.

F. nebulosa, p. 220.

- d*². With canines not half the length of palate; of small size; skull short and rounded; nasal area very broad and flat; orbit generally complete behind; anterior upper premolar generally absent; external characters as in the last, with the same long, bushy tail; colour fulvous to gray, mottled with black.

F. marmorata, p. 221.

- b*⁴. Cats with distinct spots.

- e*. Of large size, up to 8 feet, with broad nasal bones.

- f*. Ground colour yellow, covered with distinct black spots or rosettes.

F. pardus, p. 218.

- f*². Ground colour white; fur thick and bushy; spots not well defined except on the head; skull with a more swollen palate, flatter bulla, smaller paroccipital process and shorter, more lion-like nasals than the leopard.

F. uncia, p. 217.

- e*². Of moderate or small size, less than 5 feet in length; the nasals form a more or less sharp ridge, and the part of the cheek formed by the maxillae is concave.

- g*. Large; grizzled gray with spots formed by longitudinal lines broken up; hind-quarters with small black spots; tail short and thick, about one-third

the length of the head and body; skull with nasal region very much attenuated; orbits generally complete.

F. viverrina, p. 225.

- g*². Moderate size; markings very variable, ground colour yellowish gray or bright yellow to white on abdomen, with irregular dark brown blotches; tail spotted and long, about $\frac{1}{2}$ the length of head and body; skull shorter and rounder and with only slightly attenuated nasals; three upper premolars present; orbits incomplete behind.

F. bengalensis, p. 223.

- g*³. Small; colour grizzled gray with reddish-brown spots; tail unspotted; skull short and rounded as in *F. bengalensis*, but with the nasals considerably more attenuated; orbit complete behind; only two upper premolars.

F. rubiginosa, p. 225.

- a*². Lynxine group with pencilled ear-conch; generally only two upper premolars; a short tail; orbits incomplete behind.

- h*. Tail extremely short, one-quarter of length of head and body and black tipped, not reaching the hocks; ears strongly pencilled; skull with posterior nares very wide; no trace of the anterior premolar; inner lobe of upper sectorial tooth small.

F. lynx, p. 229.

- h*². Tail reaching the hocks.

- j*. Unspotted; red with black ears, strongly pencilled; skull with small lobe to upper sectorial; nasal area flat; anterior premolar absent.

F. caracal, p. 230.

- j*². Unspotted; ears yellow, black-pencilled, colour tawny; legs with indications of transverse bars; skull with inner lobe of sectorial well developed; anterior premolar present or absent.

F. chaus, p. 227.

- j*³. Spotted; pale yellow with regular small black spots; tail ridged with black posteriorly; ears with small brown pencil; skull resembles *F. chaus*.

F. ornata, p. 226.

Felis leo.

Felis leo, *Linnaeus Syst. Nat.*, 12th ed. i, p. 60 (1766); *Blyth Cat.*, p. 53; id. *P. Z. S.*, 1863, p. 182; *Ferdon Mamm.*, p. 91; *Blanford F. A. S. B.*, xxxvi, p. 189; *G. King P. A. S. B.*, 1868, p. 198; *Stoliczka F. A. S. B.*, xli, p. 226; *Blanford Persia*, p. 29; *Ball P. A. S. B.*, 1881, p. 3; *Elliot Monog. Felidae* no. i; *Sterndale Mamm. Ind.*, p. 159; *Blanford Mammals*, p. 56. *Felis leo goojratensis*, *Smee Trans. Zool. Soc.*, i, p. 165, pl. xxiv (1833). *Leo barbarus*, *Gray List Mamm. B. M.*, p. 39 (1843). *Leo nobilis*, *Gray P. Z. S.*, p. 263 (1867); id., *Cat. Carn. Mamm.*, p. 9.

The Lion; Hindustani, Sher, Singha; Persian, Shir; Bengali, Shingal; Guzerat, Untia bag; Kattywar, Sawach.

Distribution.—Africa from Algeria to the Cape; Mesopotamia on the west flanks of the Zagros range and Persia south of Shiraz, but not on the tableland; India (see notes below).

The Lion was formerly more widely spread in India than it is at the present day. The districts in which it occurs or has occurred are Guzerat in the extreme west of India, Central India and Bundelcund. Blanford in the *Journal As. Soc.*, vol. xxxvi, p. 189, gives accounts of a lion shot near Rewah in 1866; also of a lion stoned to death by a Mr. Arratoon of the Police at Sheorajpur, 25 miles west of Allaha-bad; in the *Asian* newspaper of June 30th, 1885, Colonel Martin, of the Central India Horse, mentions that he and General Travers killed in 1860 two lions on a hill to the west of Goona in Gwalior; and in 1862 he, with Colonel Beadon, Deputy Commissioner, turned out and killed no less than eight lions at a place called Patulghur, 70 miles north-west of Goona. The last lion in Central India, of which I can find any record, was shot by Colonel Hall near Goona in 1873.

Of the Lions of Guzerat, an exceedingly good account is given by Major General Rice in a book called "Indian Game," published in 1884. I have heard too of a lion being killed in 1888 in Guzerat, so that it is evident that the lion is not extinct in India yet, although it seems probable that he soon will be.

An account of the lion of Mount Abu (a skull of which is in the collection) is given by Dr. G. King (*l. c.*).

The skull of the lion is easily distinguished from that of the tiger by the two following points:—

- (1) In the lion the posterior processes of the nasal bones do not extend so far back as the frontal processes of the maxillæ; in the tiger the posterior processes of the nasals extend back far beyond the frontal processes of the maxillæ.
- (2) In the lion the distance between the anterior parietal suture and the postorbital processes is much shorter than in the tiger, so that the former may be called a short-waisted skull as compared with the latter.

There does not seem to be any differences in the teeth.

a. Skin, skull	♂	.....	Babu H. M. Roy.
b. Skin, skull	♀ juv.	Kattywar	Zoological Gardens.
c. Skin, skull	♀ juv.	.....	Zoological Gardens.
d. Stuffed	♂ juv.	.....	Zoological Gardens.
e. Skeleton		Algeria	A. D. Bartlett, 1849, A.S.B.
f-h. 3 skulls		.....	E. Blyth, A.S.B.
j. Skull		.....	People's Park, Madras.
k. Skull	♀ juv.	Mount Abu, Rajputana	G. King, 1868.
l. Skeleton	♂	.....	Wombell's Menagerie.
m. Skeleton	♂	.....	Zoological Gardens.
n. Skull juv. (newborn)		.....	O. L. Fraser.

Felis tigris.

Felis tigris, *Linnaeus Syst. Nat.*, 12th ed., i, p. 61 (1766); *Raffles Linn. Trans.* xiii, p. 249; *Sykes P. Z. S.*, 1831, p. 102; *Elliot Madras Journ.*, x, p. 104; *Cantor J. A. S. B.*, xv, p. 243; *Horsfield Cat. E. I. Mus.*, p. 43; *Blyth Cat.*, p. 54; *id. P. Z. S.*, 1863, p. 182; *Jerdon Mamm.*, p. 92; *McMaster Notes on Jerdon*, pp. 19, 150; *Schrenck Amurland Säugeth.*, p. 90; *Swinhoe P. Z. S.*, 1870, p. 626; *Stoliczka, J. A. S. B.*, xli, p. 226; *Blyth J. A. S. B.*, xliv, *Burma list*, p. 27; *Blanford Persia*, p. 34; *Severtzoff Ann. Mag. N. H.* (4), xviii, p. 49; *Anderson Anat. Zool. Res.*, p. 160; *Elliot Monog. Felidae*, no. 3; *Dode P. Z. S.*, 1871, p. 480; *Sterndale Mamm. Ind.*, p. 161; *Inverarity J. Bomb. Soc.*, iii, p. 143; *Thomas Linn. Trans.* (2), v, p. 55; *Radde Zool. J. B.*, iv, p. 1009; *Anderson J. Linn. Soc.*, xxi, p. 338; *Blanford Mammals*, p. 58.

Tigris regalis, *Gray List Mamm. B. M.*, p. 40 (1843); *id. Cat. Hodgs. Coll.* 1st ed., p. 4; *Adams P. Z. S.*, 1858, p. 513; *Gray Cat. Carn. Mamm.*, p. 10.

The Tiger; Hind., Bagh, Pantayat bagh or Sher; Bengali, Gowagh or Salawagh; Marhatta, Wahag, Pultite wagh; Bundelcund, Nahar; Telegu, Puli; Canarese, Huli; Lepch., Suhtong; Bhot., Tukh; Gonds, Publiah; Sind, Sheendh; Tibet, Tagh; Burmese, Kya.

Distribution.—From the Caucasus through Northern Persia (Blanford), Turkestan and Afghanistan, India, Assam, Lower and Upper Burma, Malay Peninsula (Cantor), Sumatra, Java (Temminck), Borneo? extending through China (Swinhoe) and Manchuria to Amurland (Schrenck).

In India found nearly everywhere from the Himalayas to Cape Comorin, but is not known from Ceylon.

The largest skull in the collection is the one marked "z" from the Purneah District, presented by Mr. J. Shillingford; this skull measures 15 inches from the premaxillæ to the posterior end of the supraoccipital; across the zygomata 10.3 inches; and in height with the lower jaw 7.5 inches; the largest skin is "a" from Barrackpore Park which, from the tip of the nose to the end of the tail, measures 10 feet 1 inch or, without the tail, 7 feet; these of course are measurements from the dried skin and are probably therefore considerably larger than measurements taken from the animal in the flesh would have been.

The size of tigers has been a source of much discussion, some authors, *i.e.* Mr. G. P. Sanderson and Dr. Jerdon believe that the tiger fairly measured never exceeds 10 feet and perhaps a few inches; others maintain that 11 and 12 feet tigers are by no means uncommon. Sir J. Fayrer (*Nature*, xviii, p. 219) gives a good many well-authenticated cases of tigers well over 10 feet, among them is included the tiger, the measurement of whose skull is given above; this, the Purneah large tiger measured 10 feet 8 inches according to Sir J. Fayrer; Sterndale discusses the question at some length in his book on the Indian Mammalia, he has worked

out a formula by means of which the total length of a tiger can be calculated from the skull measurements; from the formula Mr. Sterndale calculates the length of the Purneah tiger to be 10 feet 10 inches.

There seems to be no doubt that the Bengal tiger is a larger and more lanky animal than the tiger of the Central Provinces and Southern India, though in an all round measurement (Sterndale, p. 167), the Southern Indian tiger sometimes has the advantage.

The tiger of Central Asia and of Amurland is generally of a much richer colour with darker stripes, and the fur is very much more woolly, this can be seen very clearly in the case of the Afghan tiger brought home by Dr. Aichison of the Afghan Boundary Commission now or lately living in the Zoological Society's Gardens in London.

a. Skin, skull	♂	.....	Barrackpore Menagerie.
b. Skin	♀ juv.	.....	W. Rutledge, 1875.
c. Skin	♂	.....	W. Rutledge, 1875.
d. Skin	♂ juv.	Purneah, Bengal	J. F. Barckley, 1875.
e. Skin, skull	♀ juv.	.....	W. Rutledge, 1882.
f. Skin, skeleton	♂	Sunderbuns, Bengal	Purchased.
g. Skin	♀ juv.	.....	W. Rutledge.
h. Stuffed head		.....	Barrackpore Menagerie.
i. Stuffed	♀ juv.	Sunderbuns, Bengal	W. Rutledge.
k. Skeleton	♀ juv.	.....	No history.
l. Skeleton	♀	Jessore, Bengal	O. L. Fraser.
m. Skeleton		Mergui, Tenasserim	J. Anderson.
n. Skeleton	♂	... ..	Barrackpore Menagerie.
o. Skull	♀ juv.	.....	W. Rutledge.
p. Skull	♂ juv.	.....	W. Rutledge.
q. Skull	juv.	Shahabad, Bengal	J. F. Barckley.
r. Skull	♂	.. ..	Barrackpore Menagerie.
s. Skull	♀	.....	A.S.B.
t. Skull	♂	.....	A.S.B.
u. Skull		.....	Barrackpore Menagerie, A.S.B.
v. Skull		.....	A.S.B.
w. Skull		.....	A.S.B.
x. Skull		.....	A.S.B.
y. Skull		Dehing, Assam	A.S.B.
z. Skull	♂	Purneah, Bengal	J. Shillingford.
a ² . Bones of feet		Gandhra, Rohtak	Lahore Museum.
b ² . Skull		.....	E. Blyth, 1855, A.S.B.
c ² . Alc., ♀ juv. (1 day old).		.....	W. Rutledge.
d ² . Alc., foetus		.....	Purchased.
e ² . Alc., foetus		Assam	A.S.B.

Felis uncia.

Felis uncia, Schreber *Säugeth.*, iii, p. 386, pl. c (1778); *Blyth Cat.*, p. 58; id. *P. Z. S.*, 1853, p. 183; *Ferdon Mamm.*, p. 101; *Lydekker F. A. S. B.*, xlvii, p. 284; *Blanford Yarkand Mamm.*, p. 19; id. *Persia*, p. 35; *Scully P. Z. S.*, 1881, p. 201; *Dode P. Z. S.*, 1871, p. 480; *Elliot Monog. Felidæ* no. 4; *Sterndale Mamm. Ind.*, p. 184; *Blanford Mammals*, p. 71.

Felis pardus, *apud Pallas Zoog. Rosso As.*, i., p. 17 (1811).

Felis irbis, *Ehrenberg Ann. Sci. Nat.*, xxi, p. 394 (1830); *Radde Ost Siberien*, i, p. 104; *Schrenck Amurland Säugeth.*, p. 96; *Severtzoff Ann. Mag. N. H.* (4), xviii, p. 49; *Milne Edwards Rech. Mamm.*, p. 213.

Leopardus uncia, *Gray List Mamm. B. M.*, p. 41 (1843); *id. Cat. Hodgs. Coll.*, 1st ed., p. 5.

Uncia irbis, *Gray Ann. Mag. N. H.* (2), xiv, p. 394 (1854); *id. Cat. Carn. Mamm.*, p. 9.

Felis uncioides, *Horsfield Ann. Mag. N. H.* (2), xvi, p. 105 (1855).

Ounce or Snow Leopard; Simla, Burrel hay; Bhotia, Sah; Lepcha, Páhte; Tibetan, Iker.

Distribution.—All the high regions of Central Asia, Gilgit, Hunza (Scully), Turkestan, Trans-Baikalia, Amurland, Persia (Blanford), Western China (Milne Edwards).

In India the ounce has only been got in the higher ranges of the Himalayas, and, as a rule, not below an elevation of 8,000 feet.

a. Skin, skull	.....	Sir A. W. Croft, 1883.
b. Skin	Leh Ladak	H. J. Elwes, 1879.
c. Skin	Yarkand	F. Stoliczka, 1873.
d. Skin	Yarkand	F. Stoliczka, 1873.
e. Stuffed	.....	G. T. Lushington, 1845.
f. Skull juv.	Serikol, Kashgar	F. Stoliczka.
g. Skin, skull ♂	Chaprot, Gilgit, 4-4-79	J. Scully.
h. Skull	Gilgit	J. Scully.

Felis pardus.

Felis pardus, *Linnaeus Syst. Nat.*, 12th ed., i, p. 61 (1766); *Sykes P. Z. S.*, 1831, p. 102; *Elliot Madras Journ.*, x., p. 106; *Müller Over de Zoogdieren in Tem. Verhandl.* p. 29; *Horsfield Cat. E. I. Mus.*, p. 46; *Blyth Cat.* no. 173, p. 55; *id. P. Z. S.*, 1863, p. 183; *Ferdon Mamm.*, p. 97; *McMaster Notes on Ferdon*, p. 23; *Swinhoe P. Z. S.*, 1870, p. 628; *Stoliczka F. A. S. B.*, xli, p. 226; *Lydekker F. A. S. B.*, xlii, p. 284; *Blyth F. A. S. B.*, xlii, p. 27; *Blanford Persia*, p. 34; *Anderson Anat. Zool. Res.*, p. 161; *Spearman Burma Gazett.*, p. 550; *Danford and Alston P. Z. S.*, 1880, p. 51; *Elliot Monog. Felidæ*, no. 6; *Murray Zool. Sind.*, p. 27; *Sterndale Mamm. Ind.* p. 179; *Radde Zool. F. B.*, iv., p. 1010; *Blanford Mammals*, p. 67.

Felis leopardus, *Erxleben Syst. Regn. Anim.*, p. 509 (1777); *Sykes P. Z. S.*, 1831, p. 102; *Cantor F. A. S. B.*, xv, p. 243; *Horsfield Cat. E. I. Mus.*, p. 45; *Kelaart Prodr. Faun. Zeylan.*, p. 45.

Felis panthera, *Pallas Zoog. Rosso As.*, i, p. 18 (1811); *Sterndale Mamm. Ind.*, p. 183.

Felis melas, *Desmarest Mamm.*, p. 223 (1820).

Leopardus varius, *Gray List Mamm.*, B. M., p. 40 (1843); *id. Cat. Hodgs. Coll.*, 1st ed., p. 5; *Adams P. Z. S.*, 1858, p. 513.

Felis tulliana, *Valenciennes Comptes Rend.*, xlii, p. 1039 (1856).

Felis poecilura, *Valenciennes Comptes Rend.*, xlii, p. 1036 (1856).

Leopardus japonensis, *Gray P. Z. S.*, p. 262, pl. xxxiii (1862); *id. Cat. Carn. Mamm.*, p. 11.

Leopardus perniger, *Gray Cat. Hodgs. Coll.*, 2nd ed., p. 3 (1863).

Felis fontanieri, *Milne Edwards Ann. Sci. Nat. Zool.* (5), viii, p. 375 (1867); *id. Rech. Mamm.*, p. 208, pls. xxix-xxx (1869).

Leopardus chinensis, Gray P. Z. S., p. 264 (1867); id. *Cat. Carn. Mamm.* p. 11.

Leopardus pardus, Gray P. Z. S., p. 263 (1867); id. *Cat. Carn. Mamm.* p. 10.

The Leopard or Panther; Tendwa, Chita, Chitabagh, Sher, Gorbacha, Hind; Beyhewe, Tahirhay, Segabaga, Ghurbag, Dheer hay, in the Himalayas; Asnee, Beebeerbagh, Mahratt.; Honiga, Kegkal, Canarese; Chinnapulli, Telegu; Burkel bille of Gonds; Sik, Tibetan; Cooteal, Singalese; Kyamai, Keythit, Burmese.

Distribution.—Africa generally, Asia Minor (Alston), Persia (Blanford), Baluchistan (Murray), India, Assam, Ceylon (Kela-art), Lower Burma, Upper Burma (Anderson), Malay Peninsula (Cantor), Sumatra and Java (Temminck), South China (Swinhoe); North China (Swinhoe, Gray and Milne Edwards).

In India the leopard seems to be generally distributed from Sind (Murray) and the Himalayas throughout at moderate elevations to the extreme south.

There is a very large series of leopards' skulls in the Museum, and from an examination of these it is manifest that no real specific distinction can be drawn between the so-called Leopard and Panther.

The skulls of the Leopard differ enormously in size, so that at first it seemed possible to separate them into two groups, a larger and smaller; further examination, however, showed that there was a perfect gradation between the two extremes as the following measurements will show; Nos. 1 and 2 were the two extremes of the panthers, *i.e.*, larger variety, Nos. 3 and 4 of the leopard or smaller variety:—

Measurements in inches.

In the list,	Length.	Palate length.	Width of brain-case.	Lower jaw.
1. "r"	7'70	3'75	3'10	5'90
2. "u"	6'95	3'50	2'70	5'23
3. "f"	6'40	3'30	2'50	4'75
4. "e ² "	5'80	2'80	2'45	4'20

These measurements on being reduced to a common base, *i.e.*, the total length of the skull being taken as 100, show that there is a progressive increase in the width of the brain-case, as the skull decreases in length, which is the character that has been given for the leopard's skull as opposed to the panther.

1. "r"	100	48	27	76
2. "u"	100	50	30	75
3. "f"	100	51	39	74
4. "e ² "	100	48	41	72

a. Skin, skull ♂	.....	Zoological Gardens, 1878.
b. Skin ♂ juv.	.....	W. Rutledge, 1875.
c. Skin ♂ juv.	.....	W. Rutledge, 1875.
d. Skin	Muangla, Sanda Valley, Yunan.	J. Anderson.
e. Skin	Muangla, Sanda Valley, Yunan.	J. Anderson.
f. Skin, skull ♀	.....	Zoological Gardens, 1879.
g. Skin, skeleton ♀	.....	W. Rutledge.
h. Skin ♂	.....	W. Rutledge.
i. Stuffed	.....	No history, 1867.
k. Stuffed	.....	Barrackpore Menagerie, 1869.
l. Skin and skull ♂	[Black var.]	W. Rutledge, 1883.
m. Skin and skull ♀	[Black var.]	Zoological Gardens, 1880.
n. Stuffed	[Black var.] Assam.	F. Jenkins, 1844.
o. Skeleton ♂	.....	Zoological Gardens.
p. Skeleton ♀	... ..	No history.
q. Skeleton juv.	.....	Barrackpore Menagerie, 1847, A. S. B.
r-t. 3 Skulls	.....	No history, A. S. B.
u. Skull ♂	.....	W. Rutledge.
v. Skull, skelet.	Purneah, Bengal	J. Shillingford.
w. Skull	.....	Zoological Gardens, 1882.
x. Skull ♂	.....	Rajah Rajendra Mullick.
y. Skull ♂	.....	W. Rutledge.
z. Skull	.....	Zoological Gardens.
a ² . Skull	.....	A. S. B.
b ² . Skull juv.	.....	A. S. B.
c ² . Skeleton	[Black var.]	W. Rutledge.
d ² . Skeleton	" "	W. Rutledge.
e ² . Skull	" "	G. King.
f ² . Skull	" "	W. Rutledge.
g ² . Alc. still born.	" "	Zoological Gardens.
h ² . Alc. juv.	" "	Zoological Gardens.
i ² . Skull juv.	Muangla, Yunnan	J. Anderson.

Felis nebulosa.

- Felis nebulosa*, Griffith *Descrip. Vert.*, p. 37 (1821)*; id. *An. Kingd.*, v, p. 164 (1827); *Blanford Mammals*, p. 72.
- Felis diardi*, G. Cuvier *Oss. foss.*, 2nd ed., iv, p. 437 (1823)*; Blyth *P. Z. S.*, 1863, p. 183; Ferdon *Mamm.*, p. 102; Elliot *Monog. Felidae*, no. 7, *Sterndale Mamm. Ind.*, p. 185.
- Felis macrocelis*, Horsfield *Zool. Journal*, i, p. 542, pl. xxi (1825); Müller *Over de Zoogdieren in Tem. Verhondl.*, p. 29; Blyth *J. A. S. B.*, xliv, *Burma List*, p. 27; Spearman *Burma Gazett.*, p. 550; Swinhoe *P. Z. S.*, 1870, pp. 228 & 628.
- Felis sp.*, Tickell *J. A. S. B.*, xii, p. 814 (1843).
- Felis macroceloides*, Hodgson *Calc. Journ. N. H.*, iv, p. 286 (1844); Blyth *Cat.*, no. 175, p. 58; Gray *Cat. Hodgs. Coll.*, 1st ed., p. 5; Gray *Cat. Hodgs. Coll.*, 2nd ed., p. 3.

- Uncia macrocelis*, *Gray Ann. Mag. N. H.* (2), xiv, p. 394 (1854).
Uncia macroceloides, *Gray Ann. Mag. N. H.* (2), xiv, p. 394 (1854).
Leopardus brachyurus, *Swinhoe P. Z. S.*, p. 352 (1862).
Felis brachyura, *Blyth P. Z. S.*, p. 183 (1863).
Neofelis brachyurus, *Gray P. Z. S.*, p. 266 (1867); *id. Cat. Carn. Mamm.*, p. 14.
Neofelis macrocelis, *Gray P. Z. S.*, p. 266 (1867); *id. Cat. Carn. Mamm.*, p. 13.

The Clouded Tiger; Tungmar, Lepch.; Zik, Bhotea.; Lamchitta, Khas tribe of Nepal; Thit-kyoung, Burmese.

Distribution.—The Himalayas from Nepal (Hodgson) to Sikkim and Assam, hills of Burma and Siam, Malay Peninsula, Sumatra Java, Borneo (Müller), Formosa (Swinhoe).

This species has received a great many different names; the name used here, *i.e.*, *F. nebulosa*, which is apparently the oldest, was recently rediscovered by Mr. Blanford, and, as he has adopted it in his hand-book on Indian Mammals, it has been used here.

a. Skin, skull ♂	Sibsagar, Assam	Zoological Gardens.
	(S. E. Peal.)	
b. Skin, skelet.	.....	W. Rutledge, 1886.
	♀	
c. Skin ♂	.. ..	W. Rutledge, 1882.
d. Stuffed	Sikkim	E. B. Ryan, 1843, A. S. B.
e. Stuffed	Sikkim	B. H. Hodgson, A. S. B.
f. Skeleton	.....	W. Rutledge, 1882.
g. Skull	Labong, Bt. Sikkim	Purchased, 1876.

Felis marmorata.

Felis marmorata, *Martin P. Z. S.*, p. 107 (1836); *Cantor J. A. S. B.*, xv, p. 244; *Blyth Cat.*, no. 177, p. 59; *id. P. Z. S.*, 1863, p. 183; *Ferdon Mamm.* p. 104; *Elliot Monog. Felidae*, no. 8; *Sterndale Mamm. Ind.*, p. 188; *Blanford Mammals*, p. 74.

Felis diardi, *apud Jardine Nat. Libr.*, ii, p. 221 (1837).

Felis longicaudatus, *Blainville Osteog.*, ii, *Felis*, p. 47 (1839-64).

Leopardus marmoratus, *Gray List Mamm. B. M.*, p. 42 (1843).

Felis chalconi, *Gray Ann. Mag. N. H.*, xviii, p. 211 (1846); *Blyth Cat.*, p. 59, no. 176.

Felis ogilbi, *Hodgson Calc. Journ. N. H.*, viii, p. 44 (1846).

Uncia marmorata, *Gray Ann. Mag. N. H.*, (2), xiv, p. 394 (1854).

Uncia chalconi, *Gray Ann. Mag. N. H.* (2), xiv, p. 394 (1854).

Leopardus dorsul, *Gray Cat. Hodgs. Coll.*, 2nd ed., p. 3 (1863).

Catolynx marmoratus, *Gray P. Z. S.*, p. 267 (1867); *id. Cat. Carn. Mamm.*, p. 16.

Catolynx chalconi, *Gray P. Z. S.*, p. 268 (1867); *id. Cat. Carn. Mamm.*, p. 16.

? *Felis scripta*, *Milne Edwards Rech. Mamm.*, p. 341, pls. lvii, lviii, fig. 1 (1874).

Distribution.—Himalayas from Sikkim to Assam, Burma to Malay Peninsula (Cantor), Sumatra (Haagen), Java? and perhaps is the same as Milne Edwards' *Felis scripta* from East Thibet.

The Marbled Cat; Bhotea, Sikmar; Lepcha, Dosal.

a. Skin	.....	W. Rutledge, 1881.
b. Skin, skull ♂ Bhootan	.....	W. Rutledge, 1874.
c. Skin, skelet.	.....	W. Rutledge, 1882.
d. Skin, skull ♂	.....	W. Rutledge, 1881.
e. Skin, skelet. ♂	.....	W. Rutledge, 1885.
f. Skin	Samagooting, Assam	Mus. Coll., Shaik Kureem.
g. Stuffed	Malacca	Rev. F. J. Lindstedt, 1845, A.S.B.
h. Stuffed	Malacca	Rev. F. J. Lindstedt 1845, A.S.B.
j. Skin, skull ♀	.....	Zoological Gardens.

Felis temmincki.

Felis temminckii, *Vigors and Horsfield Zool. Journ.*, iii, p. 451, pl. xxii sup. (1828); *Elliot Monog. Felidae* no. 15; *Spearman Burma Gazett.*, p. 551; *Blanford Mammals*, p. 75.

Felis moormensis, *Hodgson Gleanings in Science*, iii, p. 177 (1831); id. *P. Z. S.*, 1832, p. 10; *Horsfield Cat. E. I. Mus.*, p. 49.

Leopardus moormensis, *Gray List Mamm. B. M.*, p. 41 (1843); id. *Cat. Hodgs. Coll.*, 1st ed, p. 5.

Felis aurata, *apud Blyth P. Z. S.*, p. 185 (1863); *Ferdon Mamm.*, p. 107; *P. L. Slater P. Z. S.*, 1867, p. 816, pl. xxxv; *Sterndale Mamm. Ind.*, p. 181.

Felis nigrescens, *Gray Cat. Hodgs. Coll.*, 2nd ed, p. 4 (1863).

Leopardus auratus, *Gray P. Z. S.*, p. 265 (1867); id. *Cat. Carn. Mamm.*, p. 12.

The Golden or Fire Cat; Nepal, Murmi.

Distributions.—Himalayas at moderate elevations from Nepal and Sikkim to the Tipperah hills, Burma, the Malay Peninsula and Sumatra?

a. Skin, skull ♂	.....	O. L. Fraser, 1880.
b. Skin, skull ♂ Tipperah Hills, Beng.		Zoological Gardens, 1878.
c. Skin	Sikkim	L. Mandelli, 1877.
d. Skin, skelet. ♂ Sumatra?		W. Rutledge, 1882.
e. Stuffed	Malacca	Dr. Maingay, 1867.

Felis planiceps.

Felis planiceps, *Vigors and Horsfield Zool. Journ.*, iii, p. 450, pl. xxii (1828); *Müller Over de Zoogdieren in Tem. Verhandl.*, p. 29; *Cantor J. A. S. B.*, xv, p. 245; *Blyth Cat.* no. 180, p. 62; id. *P. Z. S.* 1863, p. 185; *Elliot Monog. Felidae* no. 16.

Ailurina planiceps, *Gervais Hist. Nat. Mamm.*, ii, p. 87 (1855)*.

Viverriceps planiceps, *Gray P. Z. S.*, p. 269 (1867); id. *Cat. Carn. Mamm.*, p. 17.

The Little Fire Cat.

Distribution.—Malay Peninsula, Sumatra and Borneo (Müller) perhaps extending into Tenasserim.

a. Skin, skelet. ♂	.....	W. Rutledge.
b. Stuffed, skull	.....	Purchased, 1869.
c. Stuffed	Malacca	C. Hufnagle, 1846, A.S.B.

Felis bengalensis.

- Felis bengalensis*, *Kerr Linn. Anim. Kingd.*, p. 151 (1792)*; *Raffles Linn. Trans.*, xiii, p. 249; *Horsfield Cat. E. I. Mus.*, p. 49; *Adams P. Z. S.*, 1858, p. 514; *Blyth Cat. no. 178*, p. 60; *id. P. Z. S.*, 1863, p. 184; *Ferdon Mamm.*, p. 105; *McMaster Notes on Ferdon*, p. 29; *Anderson Anat. Zool. Res.*, p. 164; *Elliot Monog. Felidae no. 20*; *Sterndale Mamm. Ind.*, p. 189; *Blanford P. Z. S.*, 1887, p. 627; *id. Mammals*, p. 78.
- Felis javanensis*, *Desmarest N. Dict. d' Hist. Nat.*, vi, p. 115 (1816); *Horsfield Zool. Res. with plate*; *id. Cat. E. I. Mus.*, p. 48; *Elliot Monog. Felidae no. 27*.
- Felis sumatrana*, *Horsfield Zool. Res. with plate (1824)*; *id. Cat. E. I. Mus.*, p. 48.
- Felis minuta*, *Temminck Monogr. Mamm.*, i, p. 130 (1827); *Müller Over de Zoogdieren in Tem. Verhandl.*, p. 29; *Günther P. Z. S.*, 1879, p. 75; *Fentink Notes Leyd. Mus.*, v, p. 177.
- Felis nipalensis*, *Vigors and Horsfield Zool. Journ.*, iv, p. 382 (1829).
- Felis chinensis*, *Gray Charlesw. Mag. N. H.*, i, p. 577 (1837); *Swinhoe P. Z. S.*, 1870, p. 629; *Milne Edwards Rech. Mamm.*, pl. xxxib, p. 216.
- Felis sp.*, "Wagati of Mahrattas;" *Elliot Madras Journ.*, x, p. 108 (1839).
- Leopardus ellioti*, *Gray Ann. Mag. N. H.*, x, p. 260 (1842); *id. Cat. Hodgs. Coll.*, 1st ed., p. 6.
- Leopardus horsfieldii*, *Gray Ann. Mag. N. H.*, x, p. 260 (1842).
- Chaus servalinus*, *Gray List Mamm. B. M.*, p. 45 (1843).
- Leopardus javanensis*, *id. ibid.*, p. 43 (1843).
- Leopardus sumatranus*, *id. ibid.*, p. 43 (1843).
- Leopardus chinensis*, *id. ibid.*, p. 43 (1843).
- Leopardus reevesi*, *id. ibid.*, p. 44 (1843).
- Felis pardochrous*, *Hodgson Calc. Journ. N. H.*, iv, p. 286 (1844); *Horsfield Cat. E. I. Mus.*, p. 47.
- Felis jerdoni*, *Blyth P. Z. S.*, p. 185 (1863); *Ferdon Mamm.*, p. 107.
- Felis servalina*, *Gray P. Z. S.*, p. 401 (1867).
- Felis tenasserimensis*, *id. ibid.*, p. 400 (1867).
- Felis wagati*, *id. ibid.*, p. 400 (1867).
- Viverriceps ellioti*, *id. ibid.*, p. 269 (1867).
- Felis herschellii*, *Gray Cat. Carn. Mamm.*, p. 28 (1869).
- Felis undata*, *apud Blyth F. A. S. B.*, xlv, *Burma List*, p. 27 (1873); *Radde Ost Siberien*, p. 106; *Spearman Burma Gazett.*, p. 551.

Leopard Cat; Chita billa, Hindi; Bun beral, Bengali; Wagati, Shan-rahu-manjur, Mahrattas; Theet-kyoung, Arakan; Khyethit, Burmese.

Distribution.—India from the Himalayas to the extreme south (not including Ceylon), Assam, Upper and Lower Burma, Malay Peninsula, Java, Sumatra and Borneo (Müller), Philippines (Günther), South China and Formosa (Swinhoe), North China (Milne Edw.) and Amurland (Radde).

This species, as is evident from the number of synonyms which have been applied to it, is a very variable one; the three chief forms beside the typical *F. bengalensis* are *Felis pardochroa* of Hodgson, *F. javanensis* of Desmarest and *F. sumatrana* of Hors-

field; there are in the Museum typical specimens of all these three varieties.

F. pardochroa ("w") differs from the ordinary *F. bengalensis* merely in having the ground colour a bright yellow instead of the ordinary gray or grayish yellow; the skull, however, resembles in every respect the typical *F. bengalensis*.

Felis javanensis ("k²") has some resemblance to *F. viverrina* in having a grizzly gray ground and in the spots being arranged to a certain extent in straight lines instead of irregularly.

Felis sumatrana ("l²") resembles the ordinary *F. bengalensis* in every way. There does not seem to be any differences in the skulls of these three forms.

a. Skin, skull ♂	.....	W. Rutledge, 1875.
b. Skin, ske'ton ♂	.....	Zoological Gardens.
c. Skin, skull ♀	Tipperah hills	Zoological Gardens.
d. Skin, skull	.....	W. Rutledge, 1881.
e. Skin, skull ♂	.....	W. Rutledge, 1881.
f. Skin, skele-ton ♀	.....	Zoological Gardens.
g. Skin, skele-ton ♀	.....	Zoological Gardens.
h. Skin, skele-ton.	.....	Zoological Gardens.
j. Skin	Momien, Yunan, 6,000 ft.	J. Anderson.
k. Skin	Momien, Yunan, 6,000 ft.	J. Anderson.
l. Skin	Momien, Yunan, 6,000 ft.	J. Anderson.
m. Skin	Kakhyen Hills	J. Anderson.
n. Skin	Chittagong	E. R. Shopland, A. S. B.
o. Skin	Coromandel Coast	Sir W. Elliot, A. S. B.
p. Skin	Malay Peninsula	Rev. F. J. Lindstedt.
q. Skin	Sikkim	L. Mandelli.
r. Skin	Sikkim	L. Mandelli.
s. Skin	Sikkim	L. Mandelli.
t. Skin	Sikkim	No history.
u. Skin	Sikkim	No history.
v. Skin	Sikkim	No history.
w. Skin, skull	Nepal (Hodgson)	India Mus., London.
x. Stuffed	Sunderbunds, Beng.	No history.
y. Stuffed	.....	Barrackpore Menagerie.
z. Stuffed	Assam	F. Jenkins, 1842, A. S. B.
a ² . Stuffed	Sikkim	Dr. Brougham, 1871.
b ² . Stuffed	Sikkim	Dr. Brougham, 1871.
c ² . Stuffed	Coromandel Coast	Sir W. Elliot, 1848, A.S.B.
d ² . Skeleton mtd.	.....	A.S.B.
e ² . Skull	.....	Zoological Gardens, 1879.
f ² . Skeleton	.....	Zoological Gardens.
g ² . Skeleton	.....	W. Rutledge.
h ² . Skin	Sikkim ?	Purchased.
i ² . Skin	Sikkim	Purchased.
k ² . Skin, skull	Java (Horsfield)	India Mus., London.
l ² . Skin, skull	Sumatra (Sir S. Raffles)	India Mus., London.

Felis viverrina.

- Felis viverrina*, Bennett P. Z. S., p. 68 (1833); Horsfield Cat. E. I. Mus., p. 49; Blyth P. Z. S., 1863, p. 184; Jerdon Mamm., p. 103; McMaster Notes on Jerdon, p. 28; Swinhoe P. Z. S., 1870, p. 628; Blyth J. A. S. B., xliv, Burma List, p. 27; Atkinson N.-W.P. Gazett., xi, p. 17; Spearman Burma Gazett., p. 551; Elliot Monog. Felidae, no. 21; Murray Zool. Sind, p. 28; Blanford Mammals, p. 76.
- Felis viverriceps*, Hodgson J. A. S. B., v., p. 232 (1836); Kelaart Prodr. Faun. Zeylan., p. 46.
- Felis himalayana*, Jardine Nat. Libr. Mamm., ii, p. 230 (1837).
- Leopardus viverrinus*, Gray List Mamm. B. M., p. 43 (1843).
- Leopardus celidogaster*, apud Gray Cat. Hodgs. Coll., 1st ed., p. 6 (1846).
- Felis celidogaster*, Blyth Cat. no. 179, p. 61 (1863).
- Viverriceps bennettii*, Gray P. Z. S., p. 268 (1867); id. Cat. Carn. Mamm. p. 16.

The Large Tiger Cat or Fishing Cat; Bunbiral, Kupya-bagh, Hindi; Machbagrul, Bagh-dasha, Bengali; Handoon deeva, Cingalese.

Distribution.—India, Ceylon (Kelaart); Lower Burma (McMaster), Tenasserim (Spearman), and Formosa (Swinhoe).

In India is recorded from the banks of the Indus (Murray), Lower ranges of the Himalayas, Nepal Terai (Hodgson), Assam and Bengal; Jerdon also gives Travancore and the Malabar coasts. It does not seem to be found in Central India.

a. Skin, skeleton ♂	.....	Rajah Rajendra Mullick.
b. Skin, skeleton ♀	.....	W. Rutledge, 1873.
c. Skin	Cachar	Mus. Collector.
d. Skin	Calcutta	A. S. B.
e. Stuffed	Calcutta	Sir J. Fayerer.
f. Stuffed	Bengal	Purchased.
g. Skull	Bengal	Purchased.
h. Skull	.....	A. S. B.
i. Stuffed and skull juv. ♂	.....	W. Rutledge.
k. Stuffed juv.	Calcutta	R. Swinhoe.
l. Skeleton	Calcutta	No history.
m. Skull juv.	.....	A. S. B.
n. Skin	Ceylon	Colombo Museum.

Felis rubiginosa.

- Felis rubiginosa*, Is. Geoff. St. Hil. Voy aux Indes Orient. Belanger, p. 140, pl. vi (1834); Kelaart Prodr. Faun. Zeylan., p. 47; Blyth P. Z. S., 1863, p. 185; Jerdon Mamm., p. 108; Elliot Monog. Felidae no. 28; Sterndale Mamm. Ind., p. 192; Blanford P. Z. S., 1887, p. 629; id. Mammals, p. 81.
- Viverriceps rubiginosa*, Gray P. Z. S., p. 269 (1867); id. Cat. Carn. Mamm., p. 18.

The Rusty Spotted Cat ; Namali pilli or Verewa puni, Tamil ; Coolla-deeva, Cingalese.

Distribution.—Madras coasts, hills of Southern India, Ceylon (Kelaart), and perhaps Central India, Seonee (Sterndale).

a. Skin, skull ♀	.....	Zoological Gardens.
b. Skin, skull ♀	.....	Zoological Gardens.
c. Stuffed, skeleton ♀	.....	Zoological Gardens.
d. Skin	Ceylon	Colombo Museum, 1887.
e. Skin	♂ Bangalore	Museum Coll. (Jaffa).

Felis manul.

Felis manul, *Pallas Reise*, iii, p. 692 (1776)* ; *Brandt Bull. Acad. St. Petersburg*, ix, 1841, p. 37* ; *Blyth P. Z. S.*, 1863, p. 185 ; *Elliot Monog. Felidæ*, no. 9, *Blanford Mammals*, p. 83 ; *Radde Zool. F. B.*, iv, p. 1013.
Felis nigripictus, *Hodgson F. A. S. B.*, xi, p. 276, with plate (1842).

Pallas' Cat.

Distribution.—Central Asia generally from Mongolia and Thibet to the Transcaspian region, extending to within the Indian Empire at Ladak.

[No specimen in the Indian Museum.]

Felis ornata.

Felis ornata, *Gray Illustr. Ind. Zool.*, i, pl. ii (1830) ; *Blyth Cat.* no. 184, p. 63 ; *Elliot Monog. Felidæ* no. 31 ; *Murray Zool. Sind*, p. 29 ; *Thomas P. Z. S.*, 1886, p. 55 ; *Blanford Mammals*, p. 84.
Felis servalina, *Jardine Nat. Libr. Mamm.*, ii, p. 232, pl. xxv (1837).
Chaus pulchellus, *Gray List Mamm. B. M.*, p. 45 (1843).
Chaus servalinus, *id. ibid.*
Felis torquata, *apud Blyth P. Z. S.*, p. 185 (1863) ; *Ferdon Mamm.*, p. 110 ; *Sterndale Mamm. Ind.*, p. 193.
Chaus ornatus, *Gray P. Z. S.*, p. 275 (1867).

Distribution.—The dry rocky countries of North-West India, from Banda, North-Western Provinces (Cockburn), thence westward through Agra, Sambhar (Thomas), to Sind where common (Murray).

This species and the next three, *i.e.*, *F. shawiana*, *F. chaus* and *F. caudata*, all appear to be very nearly allied forms, all four have a slight pencil of hairs on their ears ; *F. chaus* can be distinguished at once by its black pencil, its pepper-and-salt colour with no trace of lines or spots on the body ; *F. caudata* is very indistinctly spotted, but has a very long tail, twice the length of that of *F. chaus* ; *F. ornata* and *shawiana* seem to resemble each other in every respect ; *Blanford (Yarkand Mammals*, p. 19) distinguishes *F. shawiana* from *F. ornata* by (1) its shorter tail, (2) its more rufous colouration, (3) distinct black spots on the abdomen.

With regard to the first distinction, the tails of the two specimens of *F. shawiana* are certainly shorter than those of the specimens of *F. ornata*; but the skins are furrers, skins, both having been bought in the bazaars at Yarkand and Kashgar, and the tails in both cases seem mutilated, the tails, too, of *F. ornata* in the Museum collection vary considerably in length, from 8 to 13 inches in specimens of approximately the same size; with regard to the second point, that of colour, the difference of shade is so slight that it is only perceptible in a strong light; finally, there are in the Museum collection many specimens of *F. ornata* with quite as distinct spots on the abdomen as *F. shawiana*.

With regard to the skulls of *F. ornata*, *F. chaus* and *F. shawiana* [there is no skull in the only specimen of *F. caudata*], there does not seem to be any real substantial difference, although there are minor differences which have been pointed out by Mr. Blanford, yet it does not seem that any of the differences are sufficiently important to be due to anything but individual variations.

<i>a-h.</i> 8 skins		Banda, N.-W. P.	J. Cockburn.
<i>j.</i> Skin	♂	Agra dist., N.-W. P.	Lucknow Mus. [Ex.]
<i>k.</i> Skin	♀	Agra dist., N.-W. P.	Lucknow Mus. [Ex.]
<i>l.</i> Skin		Hazara Hills, Punj.	T. Hutton, 1845, A.S.B.
<i>m.</i> Skin		Hansi, Punjab	D. Scott, A.S.B.
<i>n.</i> Skin		Hansi, Punjab	D. Scott, A.S.B.
<i>o.</i> Skin		nr. Karachi, Sind	Karachi Museum.
<i>p.</i> Skin		Mullier, Sind	Col. Meurant.
<i>q-t.</i> 4 Skulls		Banda dist., N.-W. P.	J. Cockburn.
<i>u.</i> Skull		Karachi, Sind	Karachi Museum.

Felis shawiana.

Felis shawiana, Blanford *J. A. S. B.*, xlv, p. 49 (1876); id. *Yarkand Mamm.*, p. 17, pls. *ib.*, *ic.*; *Elliot Monog. Felidæ* no. 34.

Distribution.—Eastern Turkestan (Yarkand and Kashgar).

<i>a.</i> Skin, skeleton	Yarkand	W. B. Shaw.
	[Type of <i>F. shawiana</i> , Blanford].	
<i>b.</i> Skin	Yarkand bazaar	F. Stoliczka.
<i>c.</i> Skin	Kashgar, 11-74	J. Scully.

Felis chaus.

Felis chaus, *Guldenstadt Nov. Comm. Acad. Petrop.*, xx, p. 483 (1770); *Sykes, P. Z. S.*, 1831, p. 102; *Elliot Madras Journ.*, x, p. 108; *Horsfield Cat. E. I. Mus.*, p. 50; *Kelaart Prodr. Faun. Zeylan*, p. 48; *Blyth Cat.* no. 186, p. 63; id. *P. Z. S.*, 1863, p. 186; *Tristram P. Z. S.*, 1866, p. 92; *Ferdon Mamm.*, p. 111; *McMaster Notes on Ferdon*, p. 29; *Stoliczka, J. A. S. B.*, xli, p. 227; *Blyth J. A. S. B.*, xlv; *Burma List*, p. 28; *Blanford Persia*, p. 36; *Atkinson N.-W. P. Gazett.*, xi, p. 17; *Alston P. Z. S.*, 1880, p. 52; *Sterndale Mamm. Ind.*, p. 195; *Elliot Monog. Felidæ* no. 32; *Murray Zool. Sind*, p. 29; *Spearman Burma Gazett.*, p. 551; *Thomas P. Z. S.*, 1886, p. 55; *Blanford Mammals*, p. 86; *Radde Zool. J. B.*, iv, p. 1015.

- Felis catolynx*, *Pallas Zoog. Rosso As.*, i, p. 23 (1811).
Lynx chaus, *Fischer Zoognosie*, p. 230 (1814)*.
Felis kutas, *Pearson J. A. S. B.*, i, p. 75 (1832).
Felis affinis, *Gray Illustr. Ind. Zool.*, i, pl. iii (1832).
Felis erythrotis, *Hodgson J. A. S. B.*, v, p. 233 (1836).
Felis inconspicua, *Gray Charlesw. Mag. N. H.*, i, p. 577 (1837).
Chaus lybicus, *Gray List Mamm. B. M.*, p. 45 (1843); *id. Cat. Hodgs. Coll.*, 1st ed., p. 7; *Adams P. Z. S.*, 1858, p. 514.
Felis jacquemonti, *Is. Geoff. St. Hil. Jacquemont Voyage*, p. 58 pls. ii, iii (1844).
Felis lybicus, *Loche Expl. Scient. Alger.*, iii (1850)*.
Chaus jacquemonti, *Gerrard Cat. Bones B. M.*, p. 66 (1862); *Gray Cat. Carn. Mamm.*, p. 34.

The Jungle Cat; Gurba-i-kuhi, Persian; Jangli billi, Deccani and Hindustani; Ban billi, in Kumaon; Katas, Banberal, Bengali; Hoppa, Assamese; Maut bek, Kadu bek, Bella bek, Canarese; Mota rahu, Manjur, Mahratta; Bhooga, Mahrattas (Ghats); Birka, Bhagulpore Hills; Jurka pilli, Telegu; Cherru pili, Malay-alim; Kyoung tsek-koon, Arakan.

Distribution.—Throughout North Africa, Egypt, Nubia and Barbary, Asia Minor (Alston), Palestine (Tristram); shores of Caspian, West and Southern Persia (Blanford), Afghanistan and Candahar, India, Ceylon (Kelaart), Assam and Burma (Spearman). In India universally distributed from the Himalayas and Sind to the extreme south extending eastwards to Assam.

a. Skin	♂	Agra dist., N.-W. P.	Lucknow Museum.
b. Skin	♂	Agra dist., N.-W. P.	Lucknow Museum.
c. Skin	juv. ♀	Agra dist., N.-W. P.	Lucknow Museum.
d. Skin		Punjab Salt Range	W. Theobald, A. S. B.
e. Skin		Kisht, nr. Bushire (2,000 ft).	Sir O. St. John.
f. Skin		Cachar	Sir O. St. John.
g. Skin		Banda, N.-W. P.	J. Cockburn.
h. Skin		Travancore	Purchased.
j. Skin		.....	J. E. T. Aitchison.
k. Skin	juv. ♀	.....	Zoological Gardens.
l. Stuffed		.....	No history, A.S.B.
m. Stuffed		.....	W. Rutledge.
n. Stuffed		Gurriah, nr. Calcutta	Museum Coll., 1870.
o. Stuffed		Gurriah, nr. Calcutta	Museum Coll., 1870.
p. Stuffed	♀	Raneegunge, Bengal	J. Diveria, 1867.
q. Stuffed		Simla	T. Hutton, A.S.B.
r. Stuffed	♂	Calcutta	Purchased.
s. Skull		.....	Purchased.
t. Skull		Kabul	Sir A. Burnes, A.S.B.
u. Skull		Kandahar	T. Hutton, A.S.B.
v. Skull		Ceylon	E. F. Kelaart, A.S.B.
w. ^{l2} . 6 Skulls		Banda, N.-W. P.	J. Cockburn.
c ² . Skull juv. ♀		.....	Zoological Gardens.
d ² . Skeleton		.....	A.S.B.
e ² . Skin, skull	♂	Kendrapara, Bengal	A. J. Fraser.
f ² . ^{l2} . 6 Skulls		Banda, N.-W. P.	J. Cockburn.
m ² . Skin, skull		Shevaroy Hills, Mdr.	Mrs. W. King.

Felis caudata.

Felis servalina, *apud Brandt Bull. Acad. St. Petersb.*, ix, p. 34 (1841)*; *Eversmann Bull. Nat. Mosc.*, 1848, p. 200; *Severtzoff Ann. Mag. N. H.* (4), xviii, p. 49.

Chaus caudatus, *Gray P. Z. S.*, p. 31, pls. vi, vii, (1874).

Felis caudata, *Elliot Monog. Felidae*, no. 33 (1878-83); *Scully J. A. S. B.*, lvi, p. 69; *Thomas Linn. Trans.* (2), v, p. 57; *Radde Zool. J. B.*, iv, p. 1014.

Distribution.—Transcaspian region eastwards to Afghan and Russian Turkestan.

a. Skin Maimanah, Afghanistan C. E. Yate, 1887.

Felis lynx.

Felis lynx, *Linnaeus Syst. Nat.*, 12th ed., i, p. 62 (1766); *Blyth Cat.* no. 189, p. 64; *Radde Ost Siberien*, p. 89; *Schrenck Amurland Säugeth.*, p. 87; *Severtzoff Ann. Mag. N. H.* (4), xviii, p. 49; *Alston P. Z. S.*, 1877, p. 272; id. 1880, p. 52; *Scully P. Z. S.*, 1881, p. 201; *Blanford Yarkand Mammals*, p. 19; *Elliot Monog. Felidae* no. 38; *Blanford Mammals*, p. 89.

Felis lupulina, *Thunberg Denkschr. Akad. Münch.*, ix., p. 189 (1825).

Felis vulpinus, *Thunberg Denkschr. Akad. Münch.*, ix, p. 189 (1825).

Felis virgata, *Nilsson Illum. Fig. till Faun.*, pls. iii and iv (1829)*; id. *Skand. Faun.*, p. 126*.

Felis borealis, *Keyserling & Blasius Wirbelth. Europ.*, p. 63 (1840).

Lyncus vulgaris, *Gray Cat. Hodgs. Coll.*, 1st ed., p. 7 (1846).

Felis isabellina, *Blyth J. A. S. B.*, xvi, p. 1178 (1847); id., *Cat.*, no. 183, p. 64; id. *P. Z. S.*, 1863, p. 186; *Kinloch Large Game Shooting*, i, p. 18, with plate.

Lyncus lynx, *Severtzoff Rev. Mag. Zool.* (2), x, p. 385 (1858).

Lyncus isabellinus, *Gray P. Z. S.*, p. 276 (1867); id. *Cat. Carn. Mamm.*, p. 38.

Lyncus borealis, *Gray P. Z. S.*, p. 276, (1867); id. *Cat. Carn. Mamm.* p. 37.

Distribution.—Northern Europe, Siberia, Baikal (Radde); Amurland and Sachalin (Schrenck); Turkestan (Severtzoff); Eastern Turkestan (Blanford), Gilgit (Scully), Western Thibet (Kinloch) and Eastern Thibet (Blyth).

a. Skin	Kashgar bazaar	F. Stoliczka,
b. Skin	" "	F. Stoliczka.
c. Stuffed	Norway	Christiania Univ., A. S. B.
d. Stuffed	"	Christiania Univ., A. S. B.
e. Stuffed	Thibet	G. T. Lushington, 1845, A. S. B.
f. Stuffed	"	G. T. Lushington, 1845, A. S. B.
g. Stuffed juv.	Norway	C. S. Bonnevie, 1850, A. S. B.
h-j. 2 Skulls	.....	No history, A. S. B.
k. Skin, skull	Kashgar, 11-74	J. Scully.
l. Skin, skull	Bagrot, Gilgit, 5,000ft., 10-4-79.	J. Scully.
m. Skin	Bargot, Gilgit	J. Scully.

Felis caracal.

Felis caracal, *Güldenstadt Nov. Comm. Acad. Petrop.*, xx, p. 500, (1766); *Blyth Cat.* no. 187, p. 64; id. *P. Z. S.*, 1863, p. 186; *Tristram P. Z. S.*, 1866, p. 92; *Ferdon Mamm.*, p. 113; *McMaster Notes on Ferdon*, p. 31; *Stoliczka F. A. S. B.*, xli, p. 227; *Blanford Persia*, p. 37; *Atkinson N. W. P. Gazett.*, xi, p. 18; *Alston P. Z. S.*, 1877, p. 273; *Elliot Monog. Felidae* no. 40; *Murray Zool. Sind*, p. 30; *Sterndale Mamm. Ind.* p. 198; *Blanford Mammals*, p. 88; *Rudde Zool. F. B.*, iv, p. 1016.

Lynx caracal, *Fischer Zoognosie*, p. 200 (1814)*.

Caracal melanotis, *Gray List Mamm. B. M.*, p. 46 (1843); id. *Cat. Carn. Mamm.*, p. 38.

Siahgosh, Persian and Hind.

Distribution.—Africa generally, Palestine (Tristram), Arabia, Smyrna and Taurus (Danford); Mesopotamia, Persia (Blanford), and Transcaspia. In India proper is generally distributed but found more abundantly in the west, *i. e.*, Sind (Murray), Cutch (Stoliczka), Dehra Dun? (Atkinson), and Nepal terai (Hodgson).

The anterior upper premolar present in the skull of specimen "a" is a rather uncommon variation.

a. Skin, skelet.	♂	.....	W. Rutledge.
b. Skin, skull	♀	.....	Zoological Gardens.
c. Skin, skelet.	♀	....	W. Rutledge.
d. Skin, skull	♂	.....	Zoological Gardens.
e. Skin, skull juv.	♂	.....	W. Rutledge.
f. Stuffed		.....	W. Rutledge, 1870.
g. Skeleton		.....	No history.
h. Skeleton	♂	.....	Babu H. H. Roy.
i. Skeleton	♀	.....	W. Rutledge.

Felis concolor.

Felis concolor, *Linnæus Mantissa*, p. 522 (1771)*; *Elliot Monog. Felidae* no. 2.

Felis puma, *Molina Sagg. Stor. Nat. Chili*, p. 245 (1817)*.

Felis cougar, *Lesson Man. Mamm.*, 190 (1827).

Felis unicolor, *Lesson Man. Mamm.*, p. 190 (1827).

Leopardus concolor, *Gray List Mamm. B. M.*, p. 41 (1843).

The Puma.

Distribution.—North and South America from 45° N. lat. to the Straits of Magellan.

a. Skin, skull	♀	.....	W. Rutledge, 1883.
b. Skin	South America		W. Jamrach [P.]
c. Skin, skull	Mexico		British Mus. [Ex.]
d. Skull		.....	E. Blyth, 1865.

Felis yagouarondi.

- Felis yagouarondi*, *Lacepede Œuvres d'Azara Atlas*, pl. x* ; *Fischer Zoog-nosie*, p. 228 (1814)*; *Elliot Monog. Felidae* no. 12.
Felis mexicana, *apud Desmarest N. Dict. d' Hist. Nat.*, vi, p. 112 (1816).
Felis unicolor, *Traill Mem. Wern. Soc.*, iii, p. 170 (1819).
Felis darwinii, *Martin P. Z. S.*, p. 3 (1837).
Leopardus yagouarondi, *Gray List Mamm. B. M.*, p. 42 (1843).
Felis calomithi, *Baird N. Amer. Mamm.*, p. 74 (1859)*.

Distribution.—From Mexico through Central and South America as far as Southern Paraguay.

a. Skin British Mus. [Ex.]

Felis pardalis.

- Felis pardalis*, *Linnaeus Syst. Nat.*, 12th ed., i, p. 62 (1766) ; *Gray Cat. Carn. Mamm.*, p. 19 ; *Elliot Monog. Felidae* no. 17.
Felis ocelot, *Griffith Anim. Kingd.*, v, p. 169 (1827).
Felis catenata, *Griffith Anim. Kingd.*, v, p. 169 (1827).
Felis canescens, *Swainson Anim. Menag.*, p. 118 (1838)*.
Leopardus pardalis, *Gray List Mamm. B. M.*, p. 42 (1843).
Leopardus griseus, *Gray List Mamm. B. M.*, p. 42 (1843).
Leopardus pictus, *Gray List Mamm. B. M.*, 43 (1843).
Felis melanura, *Ball P. Z. S.*, p. 128 (1844) ; *Gray Cat. Carn. Mamm.*, p. 19.
Felis albescens, *Pucheran Voyage Autour du Monde Venus Zool.*, p. 137, pl. viii (1855).
Felis grisea, *Gray P. Z. S.*, p. 270 (1867) ; *id. Cat. Carn. Mamm.*, p. 19 (1869).
Felis picta, *Severtzoff Rev. Mag. Zool.* (2) x, p. 194 (1858) ; *Gray Cat. Carn. Mamm.*, p. 19.
Felis pardoides, *Gray P. Z. S.*, p. 403 (1867) ; *id. Cat. Carn. Mamm.*, p. 20.

The Ocelot.

Distribution.—Arkansas, Louisiana, Texas, Mexico, Central America, and South America, East of Andes.

a. Skin, skull ♂ Purchased, 1880.
 b. Skull E. Blyth.

Felis serval.

- Felis serval*, *Erxleben Syst. Regn. Anim.*, p. 523 (1777) ; *Blyth Cat.* no. 181, p. 62 ; *Gray Cat. Carn. Mamm.*, p. 23 ; *Elliot Monog. Felidae* no. 25.
Felis capensis, *Gmelin Syst. Nat.*, i, p. 81 (1788).
Felis galeopardus, *Desmarest Mamm.*, p. 227 (1820).
Felis senegalensis, *Lesson Mag. de Zool.*, x (1839)*.
Felis servalina, *Ogilby P. Z. S.*, p. 94 (1839).
Leopardus serval, *Gray List Mamm. B. M.*, p. 41 (1843).

Distribution.—Africa from Algiers to the Cape.

a. Stuffed Cape Colony E. L. Layard, 1858, A. S. B

Felis caffra.

Felis caffra, *Desmarest Mamm. Suppl.*, p. 540 (1822); *Blyth Cat.*, no. 185, p. 63; *Elliot Monog. Felidae*, no. 30.
Felis obscura, *Desmarest Mamm.*, p. 230 (1820).
Felis nigripes, *Burchell's Travels.*, ii, p. 592 (1824).
Felis maniculata, *Cretzschmar Ruppell's Atlas*, i, pl. i (1826).
Felis pulchella, *Gray Charlesw. Mag. N. H.*, i, p. 577 (1837).
Chaus caffer, *Gray List Mamm. B. M.*, p. 45 (1843).
Leopardus inconspicuus, *Gray List Mamm. B. M.*, p. 44 (1843).
Felis caligata, *Is. Geoff. St. Hil. Jacquemont Voyage*, p. 49, pl. iii, fig. 2 (1844).
Felis lybica, *Is. Geoff. St. Hil. Jacquemont Voyage*, p. 56 (1844).
Felis sylvestris, *Loche Rev. Mag. Zool.*, (2), x, p. 49 (1858).
Felis inconspicua, *Gray P. Z. S.*, p. 273 (1867); *id. Cat. Carn. Mamm.*, p. 31.

Distribution—Africa from Algeria to the Cape.

a. Stuffed	Cape Colony	E. L. Layard, A.S.B.
b. Skull	...	A.S.B.

Felis catus.

Felis catus, *Linnaeus Syst. Nat.*, 12th ed., i, p. 62 (1776); *Blasius Säuegeth. Deutsch.*, p. 162; *Blanford Persia*, p. 35; *Danford and Alston, P. Z. S.*, 1877, p. 272 and 1880, p. 52; *Elliot Monog. Felidae* no. 29.
Felis sylvestris, *Schreber Säuegeth.*, iii, p. 397 (1778); *Blyth Cat.*, no. 182, p. 62.

Distribution—Europe generally, extending eastwards into Persia (Blanford) and Asia Minor (Alston).

a. Stuffed, skull	Scotland	Sir W. Jardine, 1843, A.S.B.
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Felis pardina.

Felis pardina, *Temminck Monogr. Mamm.*, i, p. 116 (1827); *Elliot Monog. Felidae* no. 37.
Lyncus pardinus, *Gray List Mamm., B. M.*, p. 46 (1843); *id. Cat. Carn. Mamm.*, p. 38 (1869).

Distribution—Portugal, Spain, Sardinia, Sicily, Turkey and Asia Minor.

a. Stuffed	Sardinia	British Museum [Ex.]
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Felis canadensis.

Felis canadensis, *Desmarest N. Dict. d' Hist. Nat.*, vi, p. 108 (1816); *Elliot Monog. Felidae* no. 36.
Lynx canadensis, *Rafinesque Amer. Month. Mag.*, ii, p. 46 (1817)*.
Felis borealis, *Temminck Monogr. Mamm.*, i, p. 109 (1827).
Lyncus canadensis, *Gray List Mamm., B. M.*, p. 46 (1843); *id. Cat. Carn. Mamm.*, p. 37.
Lynx borealis, *Daléy New York Zool.*, p. 5 (1812).

Distribution—Northern Europe, Scandanavia, Russia, and Siberia, North America, as far south as Pennsylvania and California.

a. Skin	Hudson's Bay	British Museum [Ex.]
b. Skin	Alumette Isle, Ottawa	J. H. Garnier [Ex.]
c. Skull	Upton, Maine, U.S.A.	W. Theobald, 1869.
d. Skull	Umbagog Lake, Maine, U.S.A.	W. Theobald, 1869.

Felis rufa.

Felis rufa, *Guldenstadt Nov. Comm. Acad. Petrop.*, xx, p. 499 (1776) ;

Blyth Cat. no. 190, p. 65 ; *Elliot Monog. Felidae* no. 39.

Felis carolinensis, *Desmarest Mamm.* p. 234 (1820).

Lynx floridanus

Lynx montanus

Lynx rufus

Lynx aureus

Lynx faciatus

} *Rafinesque Amer. Month. Mag.*, ii, p. 46 (1817)*.

Felis maculata, *Vigors and Horsfield Zool. Journ.*, iv, p. 381, pl. xiii (1829).

Distribution—North America to Mexico.

a. Skin	Lake Amhee, Ontario	J. H. Garnier [Ex.]
b. Skin	juv. Blue Ridge, Ontario	J. H. Garnier [Ex.]
c. Skull	North Carolina	Rev. F. Fitzgerald, A.S.B.

Felis domestica.

Felis domestica, *Gmelin Syst. Nat.*, i, p. 80 (1788) ; *Elliot Monog. Felidae* no. 41 ; *Thomas Linn. Trans.* (2), v, p. 57.

Felis catus, *Erxleben Syst. Reg. Anim.*, p. 518 (1777) ; *Blyth J. A. S. B.*, xxv, p. 442 ; id. *Cat.* no. 183, p. 62 ; *Severtzoff Ann. Mag. N. H.* (4), xviii, p. 50 ; *Blanford Yarkand Mamm.*, p. 17.

Felis torquata, *F. Cuvier Hist. Nat. Mamm.*, livr. liv, with plate, (1826) ; *Sykes P. Z. S.*, 1831, p. 102 ; *Horsfield Cat. E. I. Mus.*, p. 49 ; *Thomas P. Z. S.*, 1886, p. 55 ; *Blanford Mammals*, p. 85.

Felis maniculata, *Fenyns Brit. Vert. Anim.*, p. 15 (1835).

Felis megalotis, *Müller Over de Zoogdieren in Tem. Verhandl.*, p. 54 (1839-44).

Felis huttoni, *Blyth J. A. S. B.*, xv, p. 169 (1846) ; id. *J. A. S. B.*, xvii, p. 247.

The Domestic Cat of India differs considerably from the English domestic cat ; Blyth distinguishes two races of Indian domestic cats—(1) the spotted type in which the spots tend to form themselves into streaks, especially on the anterior parts of the body ; the tail of this form is slender and of uniform thickness, with a series of black rings ; this form is frequently found in a feral state and it is probable that it was from an animal of this kind that *Felis torquata* of F. Cuvier was originally described ; (2) the other form was called by Blyth the Chaus-coloured cat ; it is of a uniform fulvous colour with barred legs and a ringed tail, resembling *F. chaus* ; in its proportions, however, it differs from

F. chaus considerably, its legs and ears are much shorter and its tail much longer, this Blyth suspects to be derived from the domestic cat with an admixture of *chaus* blood.

The two examples of this latter form are "e" and "j" of the list below; "e" is specially to be noticed since it was shot in the town of Banda, round which *F. chaus* abounds.

The English tabby is never seen in India; this may possibly be due to the fact that the tabby markings of the English domestic cat are due to an admixture of the blood of the wild cat (*F. catus*). Evidence to show that domestic cats breed with some of the different species of wild cats will be found in Pennant where, after the description of *F. bengalensis*, he mentions that the specimen from which the description was drawn up, coupled with female domestic cats and produced offspring; Blyth also quotes the evidence of Sir Walter Elliot on the subject (*vide* J.A. S. B., xvii, pp. 247 and 559) in the cases of *F. chaus* and *F. rubiginosa*.

There are also in the collection two skins which seem to require further remark, these are "f", the skin procured by Dr. Scully at Kashgar, and "g" one procured by the Afghan Boundary Commission at Wen Male.

The former, which is a flat skin without a skull, was described by Mr. Blanford in the Yarkand Mammals as *F. catus*, but it differs from *F. catus* in having a slender and tapering tail instead of a clubbed one which is so characteristic of the true *F. catus* of Europe. The other skin from Afghanistan also has a slender tapering tail; a comparison of the skull of this specimen with a skull of an English *F. catus*, and with the skulls of several specimens of *F. domestica* shows that this Afghan cat agrees with the domestic cat in the several points in which the latter differs from *F. catus*, *i.e.*, in *F. domestica*, the frontal and squamosal bones are separated from one another by the parietals and alisphenoids, the nasals are not produced posteriorly beyond the frontal processes of the maxillæ, and, finally, the teeth are small as compared with *F. catus*. In all these points the Afghan cat agrees with the domestic cat and not with *Felis catus*.

a. Skin	Punjab Salt Range	W. Theobald, A.S.B.
b. Skin	Hansi, Punjab	D. Scott, A.S.B.
c. Skin	.....	E. Blyth, A.S.B.
d. Skin	Deccan (Col. Sykes)	India Mus., London.
e. Skin, skull	Banda (town), N.-W.P.	J. Cockburn (1881).
f. Skin	Kashgar	J. Scully.
g. Skin	Wen Male, Afghanistan	J. E. T. Aichison.
h. Stuffed (tabby)	.....	No history, A.S.B.
j. Stuffed, skull	Calcutta	No history, A.S.B.
k. Stuffed	.. ..	No history, A.S.B.
l. Skull	.....	No history, A.S.B.
m. Skeleton	.....	No history, A.S.B.
n. Skeleton	Calcutta	Purchased.

Genus CYNÆLURUS.

- Cynailurus*, *Wagler Nat. Syst. Amphib.*, p. 30 (1830).
Cynofelis, *Lesson Nouv. Tab. Reg. Anim.*, p. 48 (1842).
Gueparda, *Gray List Mamm. B. M.*, p. 46 (1843).

Cynaelurus jubatus.

- Felis jubata*, *Erxleben Syst. Reg. Anim.*, p. 510 (1777); *Sykes P. Z. S.*, p. 102 (1831); *Elliot Madras Journ.*, x, p. 107; *Blyth P. Z. S.*, 1863, p. 181; *Jerdon Mamm.*, p. 114; *Blanford F. A. S. B.*, xxxvi, p. 191, *McMaster Notes on Jerdon*, p. 31; *Stoliczka, F. A. S. B.*, xli, p. 227; *Blanford Persia*, p. 35; *Ball P. A. S. B.*, 1877, p. 169; *Alston P. Z. S.*, 1880, p. 52; *Severtzoff Ann. Mag. N. H.* (4), xviii, p. 49; *Murray Zool. Sind*, p. 30; *Sterndale Mamm. Ind.*, p. 200; *Thomas Linn. Trans.* (2), v, p. 56; *Radde Zool. F. B.*, iv, p. 1012.
Felis guttata, *Hermann Obser. Zool.*, p. 38 (1804).
Cynailurus jubatus, *Wagler Nat. Syst. Amphib.*, p. 30 (1830); *Blyth Cat.*, no. 191, p. 65; *Elliot Monog. Felidae* no. 42; *Blanford Mammals*, p. 91.
Cynofelis jubata, *Lesson Nouv. Tab. Regn. Anim.*, p. 49 (1842).
Cynofelis guttata, *id. ibid.*
Gueparda guttata, *Gray P. Z. S.*, p. 277 (1867); *id. Cat. Carn. Mamm.*, p. 39.
Felis megabalia, *Heuglin Zeitschr. Allg. Erdkunde*, iii, p. 53 (1868)*.

The Cheetah or hunting leopard; Yuz palang, Persian; Yuz-cheetah bagh, Hindustani; Kendua bagh, Bengali; Cheeta, Deccani; Chircha, Sivungi, Canarese; Chita puli, Telegu.

Distribution.—Africa generally; has been recorded by Alston from Euphrates valley, Transcaspia, Western Turkestan (Severtzoff) and Persia, (Blanford). In India it is found in the Central and western districts, *i.e.*, Deccan (Sykes), Saugor, Central India (Jerdon), the Punjab, Sind (Murray), Cutch (Stoliczka), and has been procured as far as east as Deogurh in the Sonthal Pergunnahs (Blanford).

a. Skin, skull ♂	.....	Babu H. M. Roy.
b. Skin, skeleton ♀	.....	Zoological Gardens.
c. Skin ♀ juv.	.....	W. Rutledge.
d. Skin ♀	.....	W. Rutledge.
e. Skeleton ♀	.....	W. Rutledge.
f. Skull ♀ juv.	.....	W. Rutledge.
g. Stuffed	.....	E. Blyth, 1857, A. S. B.
h. Skeleton	.. ..	E. Blyth, 1857, A. S. B.

Genus VIVERRA.

Viverra, *Linnaeus Syst. Nat.*, 12th ed., p. 63 (1766).

Key of the Indian Species.

- a. Tail with complete light and dark rings; body markings indistinct and cloudy, not spotty; size large; anterior upper molars distinctly triangular.

V. zibetha, p. 236

a². Tail with light and dark rings incomplete.

b. Large size; black rings all complete, light rings just broken by the dorsal black band of the tail; flanks distinctly spotted with large spots.

c. Mane commencing between the ears; skull with anterior upper molars quadrangular as compared with *V. zibetha*. ***V. civettina***, p. 237.

c². Mane commencing between the shoulders.

V. megaspila, p. 237.

b². Smaller; only a few of the posterior black rings of the tail complete, and the dorsal black band broad.

V. tangalunga, p. 237.

***Viverra zibetha*.**

Viverra zibetha, *Linnaeus Syst. Nat.*, 12th ed., i, p. 65 (1766); *Gray Illustr. Ind. Zool.*, ii, pl. v; *McClelland Calc. Journ. N. H.*, i, p. 56; *Gray Cat. Hodgs. Coll.*, 1st ed., p. 7; *Horsfield Cat. E. I. Mus.*, p. 54; *Walker Calc. Journ. N. H.*, iii, p. 266; *Blyth J. A. S. B.*, xxxi, p. 331; *id. Cat.*, p. 45; *Gray P. Z. S.*, 1864, p. 512; *Ferdon Mamm.*, p. 120; *Gray Cat. Carn. Mamm.*, p. 46; *Swinhoe P. Z. S.*, 1870, pp. 227, 630; *Blyth J. A. S. B.*, xlv, *Burma list*, p. 25; *Sterndale Mamm. Ind.*, p. 208; *Spearman Burma. Gazett.*, p. 547; *Blanford Mammals*, p. 96.

Viverra undulata, *Gray Spiceleg. Zool.*, p. 9 (1830).

Viverra melanurus, *Hodgson J. A. S. B.*, x, p. 909 (1841); *id. Calc. Journ. N. H.*, ii, p. 47.

Viverra civettoides, *Hodgson id. ibid.*

Viverra ashtoni, *Swinhoe P. Z. S.*, p. 379, (1864).

The Indian Civet Cat; Katas, Hindustani; Machbhondar, Bagdos, and Pudogaula, Bengali; Bhras, Nepal terai; Nit biralu, Nepal; Kung, Bhotia; Saphiong, Lepcha; Kyung-myeng, Burmese; Hagah gendrah, Assamese.

Distribution.—Bengal, extending northwards to the Nepal Terai and southwards to Cuttack, Assam, Burma, Southern China and Hainan (Swinhoe); its occurrence in the Malay Peninsula seems doubtful since it has been so often confused with *V. megaspila* and *V. tangalunga*.

a. Skin, skull	.....	No history.
b. Skin, skull ♀	Calcutta	Purchased, 1870.
c. Skin	Maldah, Bengal	Mus. Coll., 1870.
d. Skin, skull ♂	Calcutta	Purchased.
e. Skull ♂	.....	W. Rutledge, 1876.
f. Skin, skull ♂	.....	W. Rutledge.
g. Skin ♀	.....	Zoological Gardens.
h. Skull	.....	A. S. B.
j. Skull	.....	A. S. B.
k. Stuffed ♂	Calcutta	Purchased, 1871.
l. Skeleton	.....	A. S. B.
m. Skull	.....	A. S. B.
n. Skull ♂ juv.	.....	W. Rutledge, 1872.

Viverra civettina.

Viverra civettina, Blyth *J. A. S. B.*, xxxi, p. 332 (1862); id. *P. Z. S.*, 1864, p. 484; id. *Cat.* no. 140 p. 44; *Ferdon Mamm.*, p. 121; *Blanford Mammals*, p. 98.

Distribution.—Malabar Coast, Wynaad and Coorg.

This species, described first by Blyth from Southern India, seems to differ in several respects from *V. zibetha*; instead of the indefinite stripy markings of *V. zibetha*, the hinder part of the body of *V. civettina* is covered with distinct large black spots and the ground colour is distinctly yellow; the yellow rings on the tail are broken by the longitudinal dorsal black band down the tail, whereas in *V. zibetha* the yellow rings completely surround the tail.

The skulls too, differ in several respects; the large upper molar of *V. civettina* is much more quadrangular and its length bears a much greater ratio to its breadth than in *V. zibetha*, in which the tooth is almost triangular; the postorbital processes of the frontal bones are almost absent in *V. civettina*, whereas in *V. zibetha* they are quite distinct.

a. Skin, skeleton	.....	W. Rutledge.
b. Skin, skull	South India	Lord A. Hay, 1845, A.S.B.
[Type of <i>V. civettina</i> of Blyth.]		
c. Skin	.....	Purchased.
d. Skin	.....	Purchased.

Viverra megaspila.

Viverra tangalanga, *apud Cantor J. A. S. B.*, xv, p. 197 (1846).

Viverra megaspila, Blyth *J. A. S. B.*, xxxi, p. 331 (1862); id. *J. A. S. B.* xliv, *Burma List*, p. 25; *Spearman Burma Gazett.*, p. 548, *Gunther P. Z. S.*, 1876, p. 428, pl. xxxvii; *Blanford Mammals*, p. 99.

Distribution.—Burma and the Malay Peninsula, Cochin China and Sumatra.

[No specimens in Indian Museum.]

Viverra tangalanga.

Viverra tangalanga, *Gray P. Z. S.*, p. 63 (1832); '*Horsfield Cat. E. I. Mus.*, p. 57; *Blyth J. A. S. B.*, xxxi, p. 332; id. *Cat.* no. 142, p. 45; *Gray Cat. Carn. Mamm.*, p. 47, *Gunther, P. Z. S.*, 1876, pp. 427 and 735.

Viverra zibetha, *apud F. Cuvier Hist. Nat. Mamm.*, livr xxi, with plate (1820); *Raffles Linn. Trans.*, xiii, p. 251; *Müller Over de Zoogdieren in Tem. Verhandl.*, p. 30; *Cantor J. A. S. B.*, xv, p. 197.

Distribution.—Malay Peninsula, Sumatra (Raffles), Borneo Celebes and Amboyna (Müller), Philippines (Gunther).

a. Skin, skull	Malacca	F. W. Lindstedt, 1846, A.S.B.
b. Skin, skull ♂	.....	W. Rutledge.
c. Skeleton ♂	.....	Purchased, 1867.
d. Stuffed	Malacca	F. W. Lindstedt, A.S.B.
e. Stuffed ♂	Malay Peninsula	J. Anderson.
f. Skin	.....	Purchased, 1867.
g. Skin, skull ♀	Penang	Zoological Gardens.
juv.		
h. Skin, skelet. ♀	.....	W. Rutledge.
juv.		
j. Skin ♂	.....	W. Rutledge.

Viverra civetta.

Viverra civetta, Schreber *Säugeth.*, iii, p. 418, *Atlas*, pl. cxi (1778); *Gray Cat. Carn. Mamm.*, p. 46.

Distribution—Africa generally.

a. Skin	♀	W. Rutledge.
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Genus VIVERRICULA.

Viverricula, Hodgson *Ann. Mag. N. H.*, i, p. 152 (1838). *Type*, *V. malaccensis*.

Viverricula malaccensis.

Viverra malaccensis, Gmelin *Syst. Nat.*, i, p. 92 (1788); *Gray Cat. Hodgs. Coll.*, 1st ed., p. 8; *Ferdon Mamm.*, p. 122; *Sterndale Mamm. Ind.*, p. 211.

Viverra leveriana, Shaw *Mus. leverianum* (1792)*.

Viverra indica, Desmarest *N. Dict. d'Hist. Nat.*, vii, p. 170 (1817); *Sykes P. Z. S.*, 1831, p. 101; *Elliot Madr. Journ.*, x, p. 102; *Horsfield Cat. E. I. Mus.*, p. 58.

Viverra rasse, *Horsfield Zool. Res.*, with plate (1824); *id. Cat. E. I. Mus.*, p. 59; *Peters Reise nach Mossambique*, i, p. 113.

Viverra bengalensis, *Gray Illustr. Ind. Zool.*, i, pl. iv (1832).

Viverra pallida, *Gray P. Z. S.*, p. 63 (1832); *id. Illustr. Ind. Zool.*, ii, pl. vi; *Swinhoe P. Z. S.* 1862, p. 353.

Viverricula indica, *Hodgson J. A. S. B.*, x, p. 909 (1841).

Viverricula malaccensis, *Cantor J. A. S. B.*, xv, p. 199 (1846); *Kelaart Prodr. Faun. Zeylan.*, p. 37; *Blyth Cat. no. 143*, p. 45; *Gray P. Z. S.*, 1864, p. 513; *id. Cat. Carn. Mamm.*, p. 47; *Swinhoe P. Z. S.*, 1870, pp. 227, 630; *Atkinson N. W. P. Gazett.*, xi, p. 19; *Blyth J. A. S. B.*, xlv, *Burma List*, p. 25; *Anderson Anat. Zool. Res.*, p. 166; *Spearman Burma Gazett.*, p. 548; *Thomas P. Z. S.*, 1886, p. 55; *Blanford Mammals*, p. 100.

The Small Civet; Mushak billi, Deccani and Hindustani; Gandha gokul, Bengali; Kasturi, Juwadee manjar, Mahratta; Punagin bekh, Canarese; Punagu pilli, Telegu; Saiger, Bugmyal, Terai of Nepal; Ooralawa, Cingalese; Wa-young-kyoung-bonk, Arakanese; Kyoung kado, Burmese.

Distribution.—Comoro Isles, Socotra and Madagascar (Thomas),

India, Ceylon (Kelaart), Assam, Burma, Upper and Lower, Malay Peninsula (Cantor), Java (Horsfield), South China, Hainan and Formosa (Swinhoe).

In India this form seems to be found everywhere except perhaps in the Punjab and Sind; it is recorded from Sambhar Lake, Rajpootana (Thomas), from the Terai of Kumaon (Atkinson), and Nepal (Hodgson), Central India, Bengal, Assam, the Deccan (Sykes), and Southern Mahratta country (Elliot).

a. Skin, skull	Assam	J. Anderson 1872.
b. Skin, skull	Assam	J. Anderson 1872.
c. Skin	Cachar	Museum Collector.
d. Skin	Naga Hills, Assam	A. W. Chennell, 1877.
e. Skin	♀ Bharno, 600 ft.	J. Anderson 1868.
f. Skin	Goona, C. India	A. Barclay.
g. Skin, skull	♂ Calcutta	Purchased, 1870.
h. Skin	Calcutta	Purchased
i. Skin	North Africa?	British Museum [Ex.]
k. Skin	juv.	No history, A.S.B.
l. Skin	juv.	No history, A.S.B.
m. Skull	.....	No history, A.S.B.
n. Skull	.....	No history, A.S.B.
o. Skull	♀	Purchased.
p-v. 7 Stuffed on one stand,	.....	No history, A.S.B.
w. Skeleton	.....	No history, A.S.B.
x. Skull	Goona, C. I.	A. Barclay.
y. Skin, skull	Chumbi, Thibet?	Schneider [P.]
z. Skin	Ceylon	Colombo Museum.

Genus PRIONODON.

Prionodon, Horsfield *Zool. Res.* (1824). *Type*, *P. gracilis*.

Linsang, Müller *Über die Zoogdieren in Tem. Verhandl.*, p. 28 (1839). *Type*, *P. gracilis*.

Key of the Indian Species.

a. Large, about 35 inches, including the tail; dorsal surface covered with large patches of black.

P. maculosus, p. 239.

a². Smaller, about 30 inches, including the tail; back with broad transverse bands.

P. pardicolor, p. 240.

Prionodon maculosus.

Prionodon maculosus, Blanford *J. A. S. B.*, xlvii, p. 152, pls. vi, vii (1878); Thomas *P. Z. S.*, 1886, p. 66; Blanford *Mammals*, p. 104.

Distribution.—Known only from Tenasserim.

[No specimen in the Museum.]

Prionodon pardicolor.

Prionodon pardicolor, *Hodgson Cal. Journ. N. H.*, ii, p. 57, pl. i, figs. 3, 6 (1842); id. *ibid.*, viii, p. 40; *Horsfield Cat. E. I. Mus.*, p. 52; *Blyth Cat.* no. 146, p. 46; *Ferdon Mamm.*, p. 124; *Anderson Anat. Zool. Res.*, p. 166; *Sterndale Mamm. Ind.*, p. 212; *Blanford Mammals*, p. 103.
Linsang pardicolor, *Gray List Mamm. B. M.*, p. 49 (1843); id. *Cat. Hodgs. Coll.*, 1st ed., p. 8.
Viverra perdicator, *Schinz Syn. Mamm.*, i, p. 366 (1844).

The Tiger Civet; Zik-chum, Bhotia; Suliyu, Lepcha.

Distribution.—Nepal, Sikkim and Kakhyen Hills of Upper Burma (Anderson).

a. Skin, skull	Darjeeling	E. R. Henry.
b. Skin	Sikkim	L. Mandelli.
c. Skin, skull	Gumpah, Sikkim	J. Knight.
d. Skin	Kakhyen Hills	J. Anderson.
e. Skin	.....	No history, A.S.B.
f. Skin	.....	No history, A.S.B.
g. Stuffed	Darjeeling	Mrs. Saxon, A.S.B.

Genus GENETTA.

Genetta, *G. Cuvier Regne Anim.*, 1st ed., i, p. 156 (1817).

Genetta vulgaris.

Viverra genetta, *Linnaeus Syst. Nat.*, 12th ed., i, p. 65 (1766).
Genetta afra, *F. Cuvier Nat. Hist. Mamm.*, livr. lii, with plate (1825); *Blyth Cat.* no. 144, p. 46.
Genetta vulgaris, *Lesson Man. Mamm.*, p. 173 (1827).
Genetta bonapartii, *Loche Rev. Mag. Zool* (2), ix, p. 385, pl. xiii (1857).

Distribution.—South Europe, *i.e.*, France, Spain and Turkey, North Africa and Palestine.

a. Stuffed	Algeria	A. Malherbe, 1848, A.S.B.
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Genetta tigrina.

Viverra tigrina, *Schreber Säugeth.*, iii, p. 425, *Atlas*, pl. cxv (1778).
Genetta abyssinica, *Rüppell N. Wirbelth.*, p. 33, pl. xi (1835).
Genetta tigrina, *Gray Cat. Mamm. B. M.*, p. 49 (1843); *Blyth Cat.* no. 145, p. 46.
Viverra genetta, *Peters Reise nach Mossambique*, i, p. 113 (1852)
Viverra abyssinica, *Gerrard Cat. Bones B. M.*, p. 71 (1862).

Distribution.—South Africa and up through Mosambique to Abyssinia.

a. Stuffed	South Africa	E. L. Layard, 1859, A.S.B.
b. Stuffed	South Africa	E. L. Layard, 1859, A.S.B.

Genus **HEMIGALE.**

Hemigalus, *Fourdan Comptes Rend.*, v, p. 442 (1837). *Type*, *H. hardwickii*.
Hemigalea, *Gray P. Z. S.*, p. 524 (1864).

Hemigale hardwickii.

Viverra hardwickii, *Gray Spiceleg. Zool.*, p. 9 (1830).
Hemigalus zebra, *Fourdan Comptes Rend.*, v, p. 442 (1837).
Paradoxurus derbianus, *Gray Charlesw. Mag. Nat. Hist.*, i, p. 579 (1837);
Cantor J. A. S. B., xv, p. 202.
Paradoxurus zebra, *Gray Charlesw. Mag. N. H.*, i, p. 579 (1837).
Viverra boiei, *Müller Tijdschr. Natuur. Ges.*, v, p. 144 (1838); *Müller & Schlegel Tem. Verhandl.*, p. 121, pl. xviii.
Hemigalea derbiana, *Blyth Cat. no. 147*, p. 46 (1863); *Jentink Notes Leyd. Mus.*, xi, p. 23.
Hemigalea hardwickii, *Gray P. Z. S.*, p. 524 (1864); *id. Cat. Carn. Mamm.*, p. 57; *Thomas P. Z. S.*, 1886, p. 73.

Distribution.—Malay Peninsula, Sumatra, and Borneo.

a. Stuffed Malacca M. de Stow, 1843, A.S.B.

Genus **ARCTOGALE.**

Arctogale, *Gray P. Z. S.*, p. 542 (1864).

Arctogale trivirgata.

Paradoxurus trivirgatus, *Gray P. Z. S.*, p. 68 (1832); *Temminck Monogr. Mamm.*, ii, p. 333, pl. lxiii.
Arctogale trivirgata, *Blanford P. Z. S.*, p. 789 (1885).

Distribution.—Java only.

The single specimen *A. trivirgata* is from Java, and seems to differ from *A. leucotis* in being smaller, having the three dark lines down the back much more distinct, and wanting the dark patch at the base of the ear. The skull also differs in being smaller, and the palate is not produced back so far as in *A. leucotis*.

a. Stuffed, skull Java W. Rutledge, 1870.

Arctogale leucotis.

Paguma trivirgata, *apud Gray List Mamm. B. M.*, p. 55 (1843); *Cantor J. A. S. B.*, xv, p. 201.
Paradoxurus leucotis, *Horsfield Cat. E. I. Mus.*, p. 66 (1851); *Blyth J. A. S. B.*, xxvii, p. 274; *Blyth Cat. no. 151*, p. 48; *Gray Cat. Carn. Mamm.*, p. 76; *Blyth J. A. S. B.*, xlv, *Burma List*, p. 26.
Paradoxurus stigmaticus, *Temminck Esquis. Zool.*, p. 120 (1853); *Jentink Notes Leyd. Mus.*, vii, p. 35; *id. ibid*, xi, p. 23.

Paradoxurus trivirgata, *apud Blyth Cat. no. 150, p. 47 (1863).*

Arctogale trivirgata, *Gray P. Z. S., p. 543 (1864); id. Cat. Carn. Mamm., p. 75.*

Paradoxurus prehensilis, *apud P. L. Sclater P. Z. S., p. 681, pl. lxxi (1877).*

Arctogale leucotis, *Blanford P. Z. S., p. 789 (1885); Thomas P. Z. S., 1886, p. 73; Blanford Mammals, p. 115; Anderson J. Linn. Soc., xxi, p. 338.*

Small Palm Civet; Na-zwet-phyoo, Arakan; Kyoung-na-ga in Tenasserim, Kyoung-na-rwek-phyoo, Burmese.

Distribution.—Sikkim, Arakan, Burma, Malay Peninsula, Sumatra and Borneo.

There has been some confusion with regard to the species of *Arctogale* which, according to Blanford (*P. Z. S.*, 1885, p. 789), are two in number, *Arctogale trivirgata*, Gray, confined to Java, and *Arctogale leucotis*, Horsf. (= *A. stigmatus* of Temminck), found in the Malay Peninsula, Borneo, Sumatra and stretching up through Arakan to Darjeeling, whence there is a skin in the Museum "a" which is probably referable to this species though, in the absence of the skull, it is not possible to make an authoritative assertion.

The specimens "f," "g" and "h" were all identified by Blyth as *A. trivirgata*, of these "g" and "h" seem to accord better with *A. leucotis* and have been re-named so; the third "f" is from Malacca and is larger and of a darker colour, and wants the black patch at the base of the ear, so that it is possible that it will turn out to be a new species.

a. Skin	Darjeeling	Dr. Stewart 1856, A. S. B.
b. Skin, skull	Moulmein dist.	Museum Collector, 1873.
c. Skin, skull	...	No history.
d. Stuffed, skull	.....	F. Skipwith, 1845, A. S. B.
e. Stuffed, skull	Arakan	Sir A. Phayre, 1846, A. S. B.
f. Stuffed, skull	Malacca	Rev. F. T. Lindstedt, 1846, A. S. B.
g. Stuffed	Rangoon	Zoological Gardens, 1878.
h. Stuffed, skull	Malacca	Rev. F. T. Lindstedt, 1847, A. S. B.
juv.		
i. Skull	.....	No history, A. S. B.
k. Skeleton ♀	.....	Zoological Gardens.
l. Skin ♂	King Isle, Mergui,	J. Anderson.
	7-2-82.	

Genus PARADOXURUS.

Paradoxurus, *F. Cuvier Hist. Nat. Mamm. livr. xxiv (1821). Type, P. niger.*

Paguma, *Gray P. Z. S., p. 95 (1831). Type, P. larvatus.*

Platyschista, *Otto Nova Acta Acad. Leop. Caro., xvii, p. 1089 (1835).*

Type, P. hermaphroditus.

Key of the Indian Species.

- a. The bony palate extends less than .25 inches behind the posterior molars; vibrissae in general dark coloured.

- b*. Colour fulvous, ashy or black; the anterior palatine foramina, only extending as far as the canines.
- c*. Teeth moderate; upper sectorial '30 inches long by '25 inches wide. **P. hermaphroditus**, p. 243.
- c*². Teeth very large; upper sectorial '39 inches long by '33 inches wide. **P. macrodus**, p. 246.
- b*². Colour dark brown, fur grizzled, not glossy, with brown tips; anterior palatine foramina extending to opposite the anterior premolars. **P. jerdoni**, p. 246.
- b*³. Colour rusty red throughout. **P. aureus**, p. 247.
- a*² The bony palate extends more than '25 inches behind the posterior molars; vibrissae in part at least conspicuously white.
- d*. Colour gray or fulvous; head markings indistinct; skull 4.5 to 4.75 inches long. **P. grayi**, p. 247.
- d*². Colour brown or rufous; head markings generally distinct brown and whitish, a broad pale band across forehead or whole face whitish; skull about 5 inches long. **P. leucomystax**, p. 248.

Paradoxurus hermaphroditus.

Var A.—typicus.

- Viverra hermaphrodita*, Schreber *Säugeth.*, iii, p. 426 (1778).
- Viverra prehensilis*, Desmarest *Mamm.*, p. 208 (1820).
- Viverra musanga*, Raffles *Linn. Trans.*, xiii, p. 252 (1820); Horsfield *Zool. Res.*, with plate (1824).
- Paradoxurus prehensilis*, Gray *P. Z. S.*, p. 66 (1832); id. *Illustr. Ind. Zool.* ii, pl. ix.
- Paradoxurus musanga*, Gray *P. Z. S.*, p. 66 (1832); Cantor *J. A. S. B.*, xv, p. 201; Blyth *Cat. no.* 148, p. 46. [pt.]; Jerdon *Mamm.*, p. 125; Müller *Over de Zoogdieren in Tem. Verhandl.*, p. 31; Blyth *J. A. S. B.*, xlv, *Burma list*, p. 26; Sterndale *Mamm. Ind.* p. 216; Jentink *Notes Leyd. Mus.*, xi, p. 22.
- Paradoxurus dubius*, Gray *P. Z. S.*, p. 66 (1832).
- Paradoxurus hermaphroditus*, Gray *P. Z. S.*, p. 67 (1832); Blanford *P. Z. S.* 1885, p. 794; Thomas *P. Z. S.*, 1886, pp. 67, 73; W. L. Sclater *P. A. S. B.*, 1888, p. 125; Blanford *Mammals*, p. 108; Anderson *J. Linn. Soc.*, xxi, p. 338.
- Paradoxurus pallasii*, Gray *P. Z. S.*, p. 67 (1832).
- Paradoxurus crossii*, Gray *P. Z. S.*, p. 67 (1832).
- Paradoxurus finlaysonii*, Gray *P. Z. S.*, p. 68 (1832).
- Paradoxurus quinquelineatus*, Gray *Charlesw. Mag. N. H.*, i, p. 579 (1837).
- Paradoxurus musangoides*, Gray *Charlesw. Mag. N. H.*, i, p. 579 (1837).

- Paradoxurus felinus*, *Wagner Schreb. Säugeth. Suppl.*, ii., p. 349 (1841).
Paradoxurus nigrifrons, *Gray List Mamm. B. M.*, p. 55 (1843).
Paradoxurus setosus, *Pucheran Hombr. et Jacq. Voy. au Pôle Sud Zool.*,
 iii, p. 25, pl. vi (1853).
Paradoxurus fasciatus, *Gray P. Z. S.*, p. 536 (1864).

Var. B.—strictus.

- Paradoxurus strictus*, *Horsfield Ann. Mag. N. H.* (2), xvi, p. 105 (1855).
Paradoxurus quadriscipus, *Horsfield Ann. Mag. N. H.* (2), xvi, p. 106
 (1855); *Gray Cat. Hodgs. Coll.*, 2nd ed., p. 5.

Var. C.—niger.

- Viverra niger*, *Desmarest Mamm.*, p. 208 (1820).
Viverra bondar, *Desmarest Mamm.*, p. 210 (1820).
Paradoxurus typus, *F. Cuvier Hist. Nat. Mamm. livr.* xxiv (1821); *Sykes*
P. Z. S., 1831, p. 102; *Elliot Madr. Journ.*, x, p. 103; *Horsfield Cat. E. I.*
Mus., p. 60; *Kelaart Prodr. Faun. Zeylan.*, p. 38.
Paradoxurus leucopus, *Ogilby Zool. Journ.*, iv, p. 304 (1828).
Paradoxurus bondar, *Gray P. Z. S.*, p. 66 (1832); *id. Cat. Hodgs. Coll.*, 1st ed.,
 p. 10; *Ferdon Mamm.*, p. 128.
Paradoxurus pennanti, *Gray P. Z. S.*, p. 66 (1832).
Platyschista pallassi, *Otto Nova Acta Acad. Leop. Caro.*, xvii, p. 1089
 (1835).
Paradoxurus hirsutus, *Hodgson As. Res.*, xix, p. 72 (1836); *id. J. A. S. B.*, x,
 p. 909.
Paguma bondar, *Horsfield Cat. Mamm. E. I. Mus.*, p. 68 (1851).
Paradoxurus hermaphroditus, *apud Gray P. Z. S.*, p. 532 (1864).
Paradoxurus musanga, *apud Blyth Cat. no.* 148, p. 46 (1863); *Ferdon Mamm.*,
 p. 125 [pt.]
Paradoxurus niger, *Blanford P. Z. S.*, p. 792 (1885); *Thomas P. Z. S.*, 1886,
 p. 55; *W. L. Sclater P. A. S. B.*, 1888, p. 125; *Blanford Mammals*,
 p. 106.

The Toddy Cat or Palm Cat; Lakati also Jharka kutta, Hindustani; Bhondor, Bengali; Menuri, Deccan; Ud, Mahrattas; Kera bek, Canarese; Manu pilli (tree cat), Telegu; Marra pilli; Malayalim; Oogoodova, Cingalese; Kyoung woon bouk, Arakan and Burmese; Jymabel (Walker), Assamese.

Distribution.—The typical variety is found throughout Burma, Siam, the Malay Peninsula, and the Islands of Sumatra, Borneo and Java; var. *strictus* seems to be confined to the Sikkim Terai and Assam; var. *niger* is found throughout India proper, from the Himalayas southwards, including Ceylon, becoming rarer towards the north-west and in the east in Lower Bengal, where it mixes with the typical variety.

Blanford in his monograph of the genus *Paradoxurus* (*P. Z. S.*, 1885, p. 780) divided the common toddy cat into two distinct species; it seems however more in accordance with the facts to recognize the two species only as geographical races; since,

although the toddy cat of Southern India is fairly distinguishable from that of the Malay Peninsula, the forms met with in Lower Bengal are intermediate between the two.

The typical variety is distinguished by the marked longitudinal stripes down the back; the hill variety (var. *strictus*), by its darker colour, more distinct spots, and smaller size, the Indian variety (var. *niger*) by the absence of definite stripes and spots which are replaced by dusky patches.

Var. A.—typicus.

a. Skin	.....	W. Rutledge.
b. Skin, skelet. ♀	Calcutta	H. Philips.
c. Skin, skull ♀	Midnapore jungles	Zoological Gardens.
juv.		
d. Skin, skelet. ♀	.....	W. Rutledge.
e. Skin, skull ♀	Calcutta	Rajah R. Mullick.
juv.		
f. Skin, skelet. ♂	Calcutta	Rajah R. Mullick.
g. Stuffed ♀	Calcutta	Purchased, 1870.
h. Stuffed juv.	Calcutta	J. Hinder, 1868.
i. Stuffed	Bengal	J. W. Laidlay.
k. Skin, skull	Calcutta	Purchased, 1870.
l. Skin, skull	Calcutta	Purchased, 1870.
m. Stuffed	Calcutta	Purchased, 1870.
n. Skin, skull	King Isle, Mergui, 31-1-82	J. Anderson.
o. Skin ♀	King Isle, Mergui, 10-2-82	J. Anderson.
p. Skin	King Isle, Mergui, 1-2-82	J. Anderson.

Var. B.—strictus.

a. Skin	.....	Zoological Gardens.
b. Skin	Dikrang, Assam	H. H. Godwin Austen.
c. Stuffed	Assam	J. Anderson, 1870.
d. Stuffed	Assam	J. Anderson, 1870.

Var. C.—niger.

a. Skull ♀	.....	No history.
b. Skin, skull ♀	Calcutta	Purchased.
c. Skin juv.	(Kitten of "b").	
d. Skin	.....	T. Galaffle.
e. Skin ♀	Paresnath, Bengal	E. V. Westmacott, 1868.
f. Skin	Goona, C. I.	A. Barclay, 1878.
g. Skin	Benares, N.-W.P.	C. Horne, 1864, A.S.B.
h. Skin, skelet. ♂	Koila Ghat, Bengal	Zoological Gardens.
i. Skin, skull ♂	Museum compound	Museum Coll.
juv.	Calcutta.	
k. Skin, skull ♀	Rangoon ?	W. Rutledge.
l. Skin, skull	.....	Babu P. K. Shaw, 1863, A.S.B.

m. Stuffed	Agra, N.-W.P.	Agra Museum, 1870.
n. Skin, skull ♀	.....	Zoological Gardens, 1878.
o. Skull	Calcutta	A.S.B.
p. Skull	Goalpara, Assam	No history.
q. Skull ♀	.....	A.S.B.
r. Skeleton	.....	A.S.B.
s. Skull	.....	No history.
t. Skin, skull	Ceylon	Colombo Mus.
u. Skin	Shevaroy hills	Mrs. W. King.
v. Skull, skin of head.	Shevaroy hills	Mrs. W. King.
w. Skull	.....	A.S.B.

Paradoxurus macrodus.

Paradoxurus macrodus, Gray P. Z. S., p. 538 (1864); id. *Cat. Carn. Mamm.*, p. 70; *Blanford P. Z. S.*, 1885, p. 801; *W. L. Sclater P. A. S. B.*, 1888, p. 125.

Distribution — Malay Peninsula.

Among the specimens of *Paradoxurus* belonging to the old collection of the Asiatic Society are four obtained from Malacca, identified by Blyth as *Paradoxurus musanga*, on examining the skulls, however, it was at once seen that these specimens were really *Paradoxurus macrodus* of Gray, only known hitherto from a single skull in the British Museum (*Blanford P. Z. S.*, 1885, p. 801). In external characters this species does not differ appreciably from *Paradoxurus hermaphroditus*, but the skulls are at once distinguished by the large size of the teeth.

a. Stuffed, skull	Malacca	E. Lindstedt, A.S.B.
b. Stuffed, skull	Malacca	E. Lindstedt, A.S.B.
c. Stuffed, skull	Malacca	E. Lindstedt, A.S.B.
d. Stuffed	juv. Malacca	E. Lindstedt, A.S.B.
e. Skeleton ♀	.....	Zoological Gardens.
f. Skeleton ♀	.....	Zoological Gardens.

Paradoxurus jerdoni.

Paradoxurus jerdoni, *Blanford P. Z. S.*, pp. 613 & 802, pl. xlix (1885); *W. L. Sclater P. A. S. B.*, 1888, p. 124; *Blanford Mammals*, p. 111.

Distribution.—Southern India, Madura Hills (*Blanford*), and Nilgiris.

This species of *Paradoxurus* lately described by *Blanford* (*P. Z. S.*, 1885, p. 613), is at once distinguished from *P. hermaphroditus* by the length of the anterior palatal foramina which extend back to a line drawn through the middle of the 1st pair of pre-

molars. The tip of the tail in the single specimen in the Museum is black, not white as described and figured by Blanford.

a. Skin, skull Ootacamund, 2-88 J. Ross.

Paradoxurus aureus.

Paradoxurus aureus, *F. Cuvier Mem. Mus. Paris*, ix, p. 48, pl. iv (1822); *Blanford P. Z. S.*, 1885, pl. 1, p. 802; id. *Mammals*, p. 110.

Paradoxurus zeylanicus, *Kelaart Prod. Faun. Zeylan.* p. 39 (1852); *Blyth J. A. S. B.*, xx, pp. 161, 184; id. *Cat.*, p. 47; *Gray Cat. Carn. Mamm.*, p. 64.

Paradoxurus montanus, *Kelaart apud Blyth J. A. S. B.*, xx, p. 161 (1851).

Coolla wedda, Cingalese.

Distribution.—Ceylon.

a. Stuffed, skull Ceylon

E. L. Layard, 1849, A.S.B.

b. Stuffed, skull Ceylon

E. L. Layard, 1849, A.S.B.

c. Stuffed, skull Ceylon

E. L. Layard, 1849, A.S.B.

juv.

d. Skin

Ceylon (West Prov.)

Colombo Museum.

Paradoxurus grayi.

Paradoxurus grayi, *Bennett P. Z. S.*, p. 118 (1835); *Blyth Cat.* no. 154, p. 48; *Ferdon Mamm.*, p. 128; *McMaster Notes on Ferdon*, p. 37; *Blyth J. A. S. B.*, xlv, *Burma List*, p. 26; *Spearman Burma Gazette.*, p. 549; *Sterndale Mamm. Ind.*, p. 217; *Ball Stray Feathers*, ii, p. 369; *Blanford P. Z. S.* 1885, p. 803; id. *Mammals*, p. 112.

Paradoxurus nipalensis, *Hodgson As. Res.*, xix, p. 76 (1836).

Paguma grayi, *Gray List Mamm. B. M.*, p. 54 (1843); id. *Cat. Hodgs. Coll.*, 1st ed., p. 9; id. *Cat. Carn. Mamm.*, p. 73.

Paradoxurus tytleri, *Tytler J. A. S. B.*, xxxiii, p. 188 (1864).

Paradoxurus laniger, *apud Blyth Cat.* no. 152, p. 48; id. *J. A. S. B.*, xxvii, p. 274.

Distribution.—The Himalayas from Simla to Assam, Arakan and the Andamans; Chota Nagpore? (Ball) Northern Circars? (McMasters).

Paradoxurus tytleri was described by Tytler as the species of Palm Cat inhabiting the Andamans, it is represented in the Museum collection by several specimens, *i.e.*, "l," "m," "n," "p," "q;" these specimens confirm, what has been already shown by Blanford, that this insular form in no way differs from the ordinary *P. grayi*.

Blyth named one of the specimens below "o" *P. laniger* of Hodgson, it does not agree, however, with the description of *P. laniger*, in which the tail is said to be $\frac{1}{2}$ the length of the body and tapering; the tail of specimen "o" is quite as long as the body, and approximately of the same width throughout, and the

whole appearance of the skin accords with that of *P. grayi*; unfortunately the skull is missing.

a. Skin, skull	.....	No history.
b. Skin, skull ♀	Assam	A. W. Chennell, 1875.
c. Skin	.....	India Mus., London.
d. Skin	Sikkim (Hodgson)	India Mus., London.
e. Skin	Sikkim	L. Mandelli, 1877.
f. Skin	Sikkim	L. Mandelli, 1877.
g. Skin	Chota Nagpore	V. Ball, 1876.
h. Stuffed	Arakan	Sir A. Phayre, 1844, A.S.B.
j. Stuffed	Arakan	Sir A. Phayre, 1844, A.S.B.
k. Stuffed	Arakan	Sir A. Phayre, A.S.B.
l. Stuffed, skull	Andamans	R. C. Tytler, 1864, A.S.B.
m. Stuffed, skull	Andamans	R. C. Tytler, 1864, A.S.B.
n. Stuffed, skull	Andamans	R. C. Tytler, 1864, A.S.B.
o. Stuffed	Himalayas	Maharajah of Burdwan, 1858, A.S.B.
p. Skeleton	Andamans	R. C. Tytler, 1864.
q. Skull	Andamans	R. C. Tytler, 1864.
r. Skull	Benares ?	C. Horne, 1868.
s. Skeleton	.....	No history.
t. Skin, skull ♂	.....	W. Rutledge, 1880.
juv.		
u. Skull	Darjeeling	No history.
v. Skull	Darjeeling	Dr. Stewart, 1856, A.S.B.
w. Skull	Andamans	R. C. Tytler, A.S.B.
x. Skin	Nepal	J. Scully.
y. Skin	Shillong, Assam	T. LaTouche.

Paradoxurus leucomystax.

Paradoxurus leucomystax, Gray *P. Z. S.*, p. 88 (1836); id. *Charlesw. Mag. N. H.*, i, p. 579 (1837); *Blyth Cat.*, p. 48; *Müller Over de Zoogdieren in Tem. Verhandl.*, p. 32; *Fentink Notes Leyd. Mus.*, v, p. 178; *Blanford P. Z. S.*, 1885, p. 805; *Fentink Notes Leyd. Mus.*, xi, p. 23

Paradoxurus jourdani, Gray *Charlesw. Mag. N. H.*, i, p. 579 (1837).

Paguma leucomystax, Gray *List Mamm. B. M.*, p. 55 (1843); *Cantor J. A. S. B.*, xv, p. 200; *Gray Cat. Carn. Mamm.*, p. 73.

Paradoxurus ogilbyi, *Fraser Zool. Typ.* pl. x (1849).

Paradoxurus auratus, *Blainville Osteog.*, ii, *Viverra*, p. 96 (1839-64).

Paradoxurus rubidus, *Blyth J. A. S. B.*, xxvii, p. 275 (1858); id. *Cat. no.* 155, p. 48.

Distribution.—Malay Peninsula, Sumatra, Borneo and probably other islands but not Java (Blanford).

a. Skin, skelet. ♀	.....	W. Rutledge, 1875.
b. Skin, skelet. ♀	.....	Purchased, 1879.
c. Skin, skull ♀	Malacca (Cantor)	India Mus., London.
d. Stuffed, skull	Malacca	Messrs. Lindstedt and Frith, 1843, A. S. B.
e. Stuffed, skull	Malacca	Messrs. Lindstedt and Frith, 1843, A. S. B.
f. Stuffed, skull	.....	Purchased, 1857, A. S. B.

[Type of *P. rubidus*, Blyth.]

Paradoxurus laniger.

Paradoxurus laniger, *Hodgson As. Res.*, xix, p. 79 (1836); *Gray Cat. Carn. Mamm.*, p. 74; *Blanford P. Z. S.*, 1885, p. 807; *id. Mammals*, p. 114. *Paguma laniger*, *Gray List Mamm. B. M.*, p. 55 (1843); *id. Cat. Hodgs. Coll.*, 1st. ed. p. 9.

Distribution.—Thibet?

[No specimen in the Museum]

Genus ARCTICTIS.

Arctictis, *Temminck Prospec. Monogr. Mamm.* (1824)*; *id. Monogr. Mamm.*, i, p. xxi, and ii, p. 310.

Ictides, *Valenciennes Ann. Sci. Nat.* (1), iv, p. 57 (1824).

Arctictis binturong.

Viverra binturong, *Raffles Linn. Trans.*, xiii, p. 253 (1822).

Paradoxurus albifrons, *F. Cuvier Mem. Mus. Paris*, ix, p. 48, pl. iv (1822).

Ictides ater, *F. Cuvier Hist. Nat. Mamm.*, livr. xlv (1824); *M'Clelland Calc. Z. N. H.*, ii, p. 457.

Ictides albifrons, *Valenciennes Ann. Sci. Nat.*, (1) iv, p. 57 (1824).

Arctictis binturong, *Temminck Monogr. Mamm.*, ii, p. 308 (1835); *Cantor Z. A. S. B.*, xv, p. 192; *Horsfield Cat. E. I. Mus.*, p. 94; *Gray Cat. Carn. Mamm.*, p. 58; *Blyth Cat. no. 157*, p. 49; *Ferdon Mamm.*, p. 130; *Mc Master Notes on Ferdon*, p. 37; *Blyth Z. A. S. B.*, xlv, *Burma List*, p. 26; *Spearman Burma Gazett.*, p. 550; *Sterndale Mamm. Ind.*, p. 221; *Blanford Mammals*, p. 118.

Arctictis pencillatus, *Müller Over de Zoogdieren in Tem. Verhandl.*, p. 32 (1839).

The Binturong or Bear Cat; Myouk kya, Burmese.

Distribution.—The Himalayas from Simla to Assam, Burma, Siam, Malay Peninsula (Cantor), Java and Sumatra (Muller).

a. Skin	Chittagong	E. Sanders.
b. Skin, skelet. ♂	.....	Purchased, 1879.
c. Skin, skull ♂	.....	Purchased, 1879.
d. Skin, skull ♀	.....	Zoological Gardens.
e. Skin juv. ♀	.....	W. Rutledge, 1878.
f. Skin, skull ♀	.....	W. Rutledge, 1882.
g. Skin, skelet. ♂	Malacca?	Rajah R. Mullick, 1873.
h. Skin, skelet. ♂	.....	W. Rutledge.
i. Skeleton ♂	Arakan	Sir A. Phayre, A. S. B.
k. Skull	.....	H. Falconor, 1854, A. S. B.
l. Skin, skull ♂	.....	Purchased, 1879.
m. Skeleton ♂	.....	Purchased, 1879.
n. Skull	.....	No history, A. S. B.

Genus CYNOGALE.

Cynogale, *Gray P. Z. S.*, p. 88 (1836).

Potamophilus, *Müller Tijdsch. Natuur. Gesch.*, v, . 140 (1838).

Cynogale bennetti.

Cynogale bennettii, *Gray Charlesw. Mag. N. H.*, i, p. 579 (1836); *Gervais Voyage Bonite Zool.*, p. 24, pl. vi; *Cantor J. A. S. B.*, xv, p. 203; *Wallace Island life*, p. 351; *Blyth Cat. no. 156*, p. 49; *Gray Cat. Carn. Mamm.*, p. 78; *Fentink Notes Leyd. Mus.*, xi, p. 24.

Viverra carcharias, *Fourdain Ann. Sci. Nat.* (2), viii, p. 281, pl. viii (1837).

Potamophilus barbatus, *Müller Tijdsch. Natuur. Gesch.*, v, p. 142 (1838); *Müller and Schlegel in Tem. Verhandl.*, p. 115, pl. xvii.

Cynogale barbata, *Schinz Syn. Mamm.*, i, p. 388.

Distribution.—Malay Peninsula (Cantor), Sumatra and Borneo.

- | | | |
|-------------------|-------------------|---|
| a. Stuffed, skull | Malayan Peninsula | Rev. F. J. Lindstedt, 1845,
A. S. B. |
| b. Skin, skelet. | ..... | W. Rutledge, 1882. |

Genus EUPLERES.

Eupleres, *Doyere Ann. Sci. Nat.* (2), iv, p. 280 (1835).

Eupleres goudoti.

Eupleres goudotii, *Doyere Ann. Sci. Nat.* (2), iv, p. 281 (1835); *Gray Cat. Carn. Mamm.*, p. 177.

Distribution.—Madagascar.

- | | | |
|------------|------------|------------------|
| a. Skin | Madagascar | Brit. Mus. [Ex.] |
| b. Skelet. | Madagascar | Brit. Mus. [Ex.] |

Genus HERPESTES.

Ichneumon, *apud Lacépède Mem. Insti. Paris*, iii, p. 492 (1801). *Type*, *H. ichneumon*.

Herpestes, *Illiger Prodr.*, p. 135 (1811). *Type*, *H. ichneumon*.

Mangusta, *Olivier apud Fischer Syn. Mamm.*, p. 162 (1829).

Mungos, *Ogilby P. Z. S.*, p. 103 (1835). *Type*, *H. vitticollis*.

Urva, *Hodgson J. A. S. B.*, vi, p. 561 (1837). *Type*, *H. urva*.

Mesobema, *Hodgson J. A. S. B.*, x, p. 919 (1841). *Type*, *H. urva*.

Osmetectis, *Gray Ann. Mag. N. H.*, x, p. 260 (1842). *Type*, *H. urva*.

Calogale, *Gray P. Z. S.*, p. 560 (1864). *Type*, *H. auropunctatus*.

Calictis, *Gray t. c.*, p. 564 (1864). *Type*, *H. smithi*.

Taeniogale, *Gray t. c.*, p. 569 (1864). *Type*, *H. vitticollis*.

Onychogale, *Gray t. c.*, p. 570 (1864). *Type*, *H. maccarthiæ*.

Key of the Indian Species.

- a. No bands or stripes on the body; colour more or less concolorous.
- b. Small (skull under $2\frac{1}{2}$ inches long), fur adpressed; hairs

on the posterior part of the back and commencement of the tail not longer than those of the rest of the body.

H. auropunctata, p. 251.

*b*². Large (skull over 3 inches long), fur not adpressed; hairs on the posterior part of the back considerably elongated.

c. Tail black tipped. **H. smithi**, p. 254.

*c*². Tail without black tip.

e. Hair with 3 very narrow light bands, about $\frac{1}{3}$ the length of the dark bands.

f. Very dark, under-fur dark-brown.

H. fuscus, p. 255.

*f*². Light yellowish; tail-tip pure yellow.

H. fulvescens, p. 255.

*e*². Hair with light and dark bands of equal length.

H. mungo, p. 253.

*a*². With streaks behind the ears.

h. Black streak behind the ear; limbs dark; tip of tail black; red on hind-quarters. **H. vitticollis**, p. 256.

*h*². White streak behind the ear; tail not black tipped; back with white tips to the fur; below chest and limbs reddish brown. **H. urva**, p. 256.

Herpestes auropunctatus.

Var. A.—typicus.

Viverra auropunctata, *Hodgson J. A. S. B.*, v, p. 235 (1836).

Herpestes nipalensis, *Gray Charlesw. Mag. N. H.*, i, p. 578 (1837); *Gray Cat. Hodgs. Coll.*, 1st ed., p. 9; *Horsfield Cat. E. I. Mus.*, p. 91; *Blyth Cat.* no. 165, p. 51; *Ferdon Mamm.* p. 136.

Herpestes auropunctatus, *Wagner Schrebr. Säugeth. Suppl.*, ii, p. 310 (1841); *Cantor J. A. S. B.*, xv, p. 242; *Alston P. Z. S.*, 1879, p. 665; *Anderson Anat. Zool. Res.*, p. 173, pl. xi, figs. 11 and 12; *Atkinson N.-W. P. Gazett.*, xi, p. 20; *Blanford Mammals*, p. 121.

Herpestes pallipes, *Blyth J. A. S. B.*, xiv, p. 346 (1845).

Herpestes griseus, *apud Hutton J. A. S. B.*, xiv, p. 346 (1845).

Herpestes javanicus, *Blyth J. A. S. B.*, xxi, p. 349 (1852).

Herpestes persicus, *Gray P. Z. S.*, p. 554 (1864); *id. Cat. Carn. Mamm.*, p. 151; *Blanford Persia.*, p. 42; *id. P. Z. S.*, 1874, p. 663; *Murray Zool. Sind*, p. 33; *Anderson Anat. Zool. Res.*, p. 174, pl. ix, figs. 9 and 10.

Calogale nepalensis, *Gray Cat. Carn. Mamm.*, p. 158 (1869).

Var. B.—birmanicus.

Herpestes auropunctatus birmanicus, *Thomas Ann. Mag. N. H.* (5), xvii, p. 84 (1886); *id. P. Z. S.*, 1886, p. 58.
Herpestes birmanicus, *Blanford Mammals*, p. 122 (1888).

Mush-i khourma, Persian.

Distribution.—South-west Persia (Blanford), Sind (Blanford), Kandahar (Hutton), and the lower ranges of the Himalayas and their neighbouring plains from Kashmir to Sikkim, including Lower Bengal.

The Burmese variety is found in Assam, Upper and Lower Burma and perhaps the Malay Peninsula.

There is now in the Museum a very fair series of *Herpestes persicus* of Gray; Anderson in his *Zoological Researches* seems to doubt whether this species is separable from *H. auropunctatus*; he, however, asserts that the skull of *Herpestes persicus* is less elongated with a broader and shorter muzzle, wider palate and broader frontal area between the orbits; all these differences seem to break down on examining a larger series of skulls, such as the Museum now possesses, and it is quite impossible to find any point of distinction between these two so-called species.

Thomas has also separated the Assamese and Burmese small mungoose as a distinct geographical race, and Blanford has raised this race to the dignity of a species.

There seems no ground for specifically separating these two races, as the distinction seems to rest merely on the slightly larger size and darker colour of the Burmese race; the hind-foot and tarsus of the four representatives of this race in the Museum varies from 1·95 to 2·05 inches, while those of the typical race run up to 2·05 as well.

Var. A.—typicus.

a. Skin		Pind Dadan Khan, Punjab.	W. Theobald, 1867, A.S.B.
b. Skin	♂	Shahpur, Punjab	G. Henderson.
c. Skin, skull		Quetta, Br. Baluchistan, (Sir O. St. John).	Zoological Gardens, 1887.
d. Skin, skull		Sukkur, Sind	F. Day [P.], 1876.
e. Skin, skull	♂	Agra, N.-W. P.	Agra Museum.
f. Skin		Agra, N.-W. P.	No history.
g. Skin		N.-W. Himalayas	T. C. Jerdon.
h. Skin, skull		Nepal	Mus. Coll., 1872.
j. Skin		Nepal	J. Scully.
k. Skin, skull		Calcutta (Bot. Gardens).	J. Anderson.
l. Skin		Calcutta	J. Anderson, 1869.
m. Skin, skull	♂	Calcutta	J. Anderson, 1869.
n. Skin	♂	Calcutta	Purchased.

<i>o.</i> Skin		Mutlah, Bengal	Mus. Coll., 1870.
<i>p.</i> Skull		Manbhoom, Bengal	J. Anderson, 1877.
<i>q.</i> Skull		Manbhoom, Bengal	J. Anderson, 1877.
<i>r.</i> Skeleton	♂	.....	Calcutta Zoological Gardens, 1877.
<i>s.</i> Skeleton	♂	.....	J. Anderson.
<i>t.</i> Skeleton	♂	.. ...	J. Anderson.
<i>u.</i> Skeleton		.....	Purchased.
<i>v.</i> Skeleton	♂	Botanical Gardens	J. Anderson, 1866.
<i>w.</i> Skeleton	♂	Calcutta	J. Anderson, 1865.
<i>x.</i> Stuffed		Calcutta	E. Blyth, 1843, A.S.B.
<i>y.</i> Stuffed		Calcutta	E. Blyth, 1843, A.S.B.
<i>z.</i> Stuffed	juv.	Calcutta	E. Blyth, 1843, A.S.B.
<i>a</i> ² . Stuffed	juv.	Calcutta	E. Blyth, 1843, A.S.B.
<i>b</i> ² . Stuffed		Midnapore	R. Rollo, A.S.B.
<i>c</i> ² . Stuffed		Midnapore	R. Rollo, A.S.B.
<i>d</i> ² . Stuffed		Agra, N.-W. P.	Dr. Stewart, A.S.B.
<i>e</i> ² . Stuffed		Agra, N.-W. P.	Dr. Stewart, A.S.B.
<i>f</i> ² . Alc. skull	♀	Rajanpur, Punjab	E. Sanders.
<i>g</i> ² . Alc. skull	♂	Sind	Karachi Museum.
<i>h</i> ² . Alc. skull	♀	Karachi	Karachi Museum.

Var. B.—birmanicus,

<i>a.</i> Skin	Cachar	Mus. Coll.
<i>b.</i> Skull	Cachar	Mus. Coll.
<i>c.</i> Skin, skull	Chittagong	D. Thorburn, 1864, A.S.B.
<i>d.</i> Skin, skull	Sawaddy, Burma	J. Anderson.

Herpestes mungo.

- Viverra mungo*, *Gmelin Syst. Nat.* i, p. 84 (1788).
Herpestes griseus, *Desmarest Mamm.*, p. 212 (1820).
Herpestes frederici, *Desmarest Dict. Sc. Nat.*, xxix, p. 60 (1823).
Mangusta malaccensis, *Fischer Syn. Mamm.*, p. 164 (1829).
Mangusta grisea, *id. ibid.*
Herpestes griseus, *Sykes P. Z. S.*, p. 102 (1831); *Wagner Hugel's Kaschmir*, iv, p. 570; *Cantor J. A. S. B.*, xv, p. 242; *Horsfield Cat. E. I. Museum*, p. 90; *Kelaart Prodr. Faun. Zeylan.*, p. 41; *Adams P. Z. S.*, 1858, p. 516; *Gray Cat. Carn. Mamm.*, p. 151; *Blyth Cat. no.* 164, p. 51; *Ferdon Mamm.*, p. 132; *Stoliczka J. A. S. B.*, xli, p. 227; *Murray Zool. Sind*, p. 33; *Sterndale Mamm. Ind.*, p. 223; *Thomas P. Z. S.*, 1886, p. 56; *Bligh and Nevill Taprobanian*, i, p. 58.
Herpestes nyula, *Hodgson J. A. S. B.*, v, p. 236 (1836); *Gray Cat. Hodgs. Coll.*, 1st ed., p. 8.
Mangusta mungos, *Elliot Madras Journ.*, x, p. 102 (1839).
Herpestes pallidus, *Wagner Schrebr. Säugeth. Suppl.*, ii, p. 311 (1841); *Anderson Anat. Zool. Res.*, p. 181.
Herpestes malaccensis, *Blyth J. A. S. B.*, xxi, p. 349 (1852); *id. Cat. no.* 163, p. 51; *Ferdon Mamm.*, p. 134; *Gray Cat. Carn. Mamm.*, p. 153.
Herpestes fimbriatus, *Temminck Esquis. Zool.*, p. 112 (1853).

Calogale nyula, Gray *P. Z. S.*, p. 560 (1864); id. *Cat. Carn. Mamm.*, p. 158.

Cynictis fimbriatus, Gray *Cat. Carn. Mamm.*, p. 171 (1869).

Herpestes ferrugineus, Blanford *P. Z. S.*, p. 661, pl. lxxxi (1874); Murray *Zool. Sind*, p. 33; Anderson *Anat. Zool. Res.*, p. 182.

Herpestes andersoni, Murray *Zool. Sind*, p. 34 (1884).

Herpestes mungo, Blanford *P. Z. S.*, p. 631 (1887); id. *Mammals*, p. 123.

The Gray Mongoose; Mungli, Canarese; Mongus, Mahratti; Moogatea, Cingalese; Nyul, Hindustani; Benji, Bengali; Mungi, Mungisu-yentawa, Telegu; Koral, Gonds; Baj or Bij, Behar; Newera, Nore, Sind.

Distribution.—India generally, from the Himalayas southwards, i.e., Kashmir (Hugel), Punjab (I. M.), Deccan (Sykes), Cutch (Stoliczka), Sind (Murray), Travancore (I. M.), Assam also Ceylon (Kelaart) and has been recorded from the Malay Peninsula, but was probably imported there.

a. Skin	♂	Agra, N.-W. P.	Agra Museum, 1870.
b-d. 3 Skins	♀	Agra, N.-W. P.	Agra Museum, 1870.
e-g. 3 Skins		Travancore	Purchased.
h. Skin		Travancore	Rev. T. Baker, A.S.B.
j-m. 4 Skulls		Banda, N.-W. P.	J. Cockburn, 1881.
n. Skull		Manbhoom, Beng.	J. Anderson, 1877.
o. Stuffed		.....	No history, A.S.B.
p. Stuffed		.....	No history, A.S.B.
q. Stuffed	juv.	Bengal	No history, A.S.B.
r. Stuffed		.....	G. Finch, 1848, A.S.B.
s. Stuffed	♂	Calcutta	Purchased.
t. Stuffed		Assam	H. P. Pierre.
u. Skin		Deccan (Sykes)	India Mus., London.
v. Skin		Shevaroy Hills, Md.	Mrs. W. King.
w-x 2 Skins	♀	Bangalore	Mus. Coll., Jaffa.

Var.—ferrugineus.

a. Skin, skull	Larkhana, Sind,	F. Day [P], 1876.
	[Type of <i>H. ferrugineus</i> , Blanford.]	
b. Skin, skull	Bushire, Persian Gulf	Karachi Mus. [Ex.]
c. Stuffed	.....	No history, A. S. B.

Herpestes smithi.

Herpestes smithi, Gray *Charlesw. Mag. N. H.*, i, p. 578 (1837); id. *P. Z. S.* 1851, p. 131, pl. xxx; Blyth *Cat. no.* 162, p. 50; Ferdon *Mamm.*, p. 135; Anderson *Anat. Zool. Res.*, p. 176; Thomas *P. Z. S.*, 1886, p. 56; Blanford *Mammals*, p. 126; Bligh and Nevill *Taprobanian*, i, p. 58.

Herpestes thysanurus, Wagner *Münch. Gel. Anz.*, ix., p. 439 (1839); id. *Schreber Säugeth. Suppl.*, ii., p. 301.

Crossarchus rubiginosus, Wagner *Schreber Säugeth. Suppl.*, ii, p. 329 (1841).

Herpestes ellioti, Blyth *J. A. S. B.*, xx, p. 162 (1851).

Herpestes rubiginosus, Kelaart *Prodr. Faun. Zeylan.*, p. 213 (1852).

Calictis smithi, Gray *P. Z. S.*, p. 565 (1864).

Herpestes jerdoni, Gray *P. Z. S.*, p. 550 (1864); id. *Cat. Carn. Mamm.*, p. 148; *Anderson Anat. Zool. Res.*, p. 183; *Sterndale Mamm. Ind.*, p. 225. *Herpestes monticolus*, *Jerdon Mamm.*, p. 135 (1867).

The Ruddy Mongoose; Konda yentava, Telegu; Erima-kiri-pilai, Tam.; Deeto, Cingalese.

Distribution.—Over the whole of India but rare, from Kashmir southwards, also Ceylon.

a. Skin	♂ Bangalore	Mus. Coll., Jaffa.
b. Stuffed and skeleton mtd.	Ceylon	E. F. Kelaart, 1852, A.S.B.
c. Stuffed	♂ Singhbhoom	V. Ball, 1869.

Herpestes fuscus.

Herpestes fuscus, *Waterhouse P. Z. S.*, p. 55 (1838); *Blyth Cat.* no. 167, p. 52; *Jerdon Mamm.*, p. 136; *Gray Cat. Carn. Mamm.*, p. 152; *Anderson Anat. Zool. Res.*, p. 184, pl. viii, figs. 1, 2; *Blanford Mammals*, p. 127.

Distribution.—Travancore and Nilgiri Hills (Jerdon); stated by Anderson to be found also in Ceylon.

a. Stuffed	Ootacamund, Md.	T. C. Jerdon, 1842, A.S.B.
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Herpestes fulvescens.

Herpestes fulvescens, *Blyth J. A. S. B.*, xx, p. 162 (1851); id. *ibid*, xxi, p. 348; id. *Cat.*, p. 52; *Blanford Mammals*, p. 127.

Herpestes flavidens, *Blyth J. A. S. B.*, xx, p. 184 (1851); *Kelaart Prodr. Faun. Zeylan.*, p. 44.

Cynictis maccarthiæ, *Gray P. Z. S.*, p. 131, pl. xxxi (1851).

Onychogale maccarthiæ, *Gray P. Z. S.*, p. 570 (1864).

Herpestes maccarthiæ, *Anderson Anat. Zool. Res.*, p. 178 (1878); *Nevill and Bligh Taprobanian*, i, p. 58.

Herpestes ceylanicus, *Nevill Taprobanian*, i, p. 62 (1885).

Ram-mugate, Cingalese.

Distribution.—Ceylon.

a. Stuffed, skull	Ceylon	E. F. Kelaart, 1852, A.S.B.
b-c. 2 Skulls	.....	No history, A.S.B.
d. Skin, skull	Ceylon	Colombo Mus., 1888.

Herpestes brachyurus.

Herpestes brachyurus, *Gray Charlesw. Mag. N. H.*, i, p. 578 (1837); *Cantor J. A. S. B.*, xv, p. 243; *Blyth Cat.* no. 170, p. 52; *Gray Cat. Carn. Mamm.*, p. 154; *Anderson Anat. Zool. Res.*, p. 187; *Wallace Island Life*, p. 351; *Jentink Notes Leyd. Mus.*, xi, p. 23.

Distribution.—Malay Peninsula and Borneo.

a. Stuffed	Malay Peninsula	C. Hufnagle, 1846, A.S.B.
b. Skull	Malay Peninsula	C. Hufnagle, 1846, A.S.B.
c. Skin	.....	Zoological Gardens, 1882.

Herpestes vitticollis.

Herpestes vitticollis, *Bennett P. Z. S.*, p. 67 (1835); *Kelaart Prodr. Faun. Zeylan*, p. 42; *Jerdon Mamm.*, p. 137; *Anderson Anat. Zool. Res.*, p. 188; *Blanford Mammals*, p. 128; *Nevill Taprobanian*, i, p. 60.
Mungos vitticollis, *Ogilby P. Z. S.*, p. 103 (1835); *Blyth Cat.*, p. 50.
Mangusta vitticollis, *Elliot Madr. Journ.*, x, p. 103 (1839).
Taeniogale vitticollis, *Gray P. Z. S.*, p. 569 (1864); *id. Cat. Carn. Mamm.*, p. 167.

Loco moogatea, Cingalese.

Distribution.—Southern India, Malabar Coast (Jerdon), and Ceylon (Kelaart).

a. Skin	Travancore	Purchased.
b. Stuffed, skull	Malabar	T. C. Jerdon, 1846, A.S.B.
c. Stuffed	Ceylon	E. L. Layard, 1848, A.S.B.
d. Skull, juv.	.....	No history, A.S.B.
e. Skin	Ceylon	Colombo Museum.

Herpestes urva.

?*Viverra fusca*, *Gray Illustr. Ind. Zool.*, i, pl. v (1830).
Gulo urva, *Hodgson F. A. S. B.*, v, p. 238 (1836); *McClelland Calc. Journ. N. H.*, ii, p. 458, pl. xiii.
Urva cancrivora, *Hodgson F. A. S. B.*, vi, p. 561 (1837); *Gray Cat. Hodgs. Coll.*, 1st ed., p. 8; *Horsfield Cat. E. I. Mus.*, p. 93; *Blyth Cat.* no. 158, p. 49; *Jerdon Mamm.*, p. 138; *Swinhoe P. Z. S.*, 1870, p. 630; *Blyth F. A. S. B.*, xlv, *Burma List*, p. 26; *Spearman Burma Gazett.*, p. 550.
Mesobema cancrivora, *Hodgson F. A. S. B.*, x, p. 910 (1841).
Osmectis fusca, *Gray Ann. Mag. N. H.*, x, p. 260 (1842).
Herpestes urva, *Anderson Anat. Zool. Res.*, p. 189, pl. ix, figs. 5, 6 (1878); *Blanford Mammals*, p. 129.

The Crab-eating Mongoose; *Urva*, Nepalese; *Mywe-ba*, Burmese.

Distribution.—Himalayas from Nepal (Hodgson) to Assam, Arakan, Burma, to North Tenasserim and South China (Swinhoe).

a. Skin	Chittagong	E. R. Shopland.
b. Skin, skelet. ♂	.....	Zoological Gardens, 1881.
c. Skin	.....	G. King, 1878.
d. Skin, skelet. ♂	... ..	Zoological Gardens, 1878.
e. Stuffed, skull	Arakan	Sir A. Phayre, 1843, A.S.B.
f. Stuffed, juv.	Arakan	Sir A. Phayre, 1843, A.S.B.
g. ?Skull	.....	Zool. Gardens, 1882.
h. Skin	Assam	O. L. Fraser.

Herpestes caffer.

Viverra cafra, *Gmelin Syst. Nat.*, i, p. 85 (1788).
Herpestes griseus, *Smuts Enum. Mamm. Capens.*, p. 19 (1832).
Herpestes madagascariensis, *Smith S. African Quart. Journ.*, ii, p. 114 (1835)*.
Herpestes bennettii, *Gray Charlesw. Mag. N. H.*, i, p. 578 (1837).
Herpestes caffer, *Blyth Cat.* no. 168, p. 52 (1863); *Thomas P. Z. S.*, 1882, p. 66.

Distribution.—Africa, south of the Sahara.

a. Stuffed	South Africa	E. L. Layard, 1859, A.S.B.
b. Stuffed	South Africa	E. L. Layard, 1859, A.S.B.
c. Skull, skelet. ♂	.....	No history.

Herpestes galera.

- Mustela galera, *Erxleben Syst. Reg. Anim.*, p. 453 (1777).
 Viverra nems, *Kerr Linn. Anim. Kingd.*, p. 160 (1792)*.
 Mustela afra, *Kerr Linn. Anim. Kingd.*, p. 175 (1792)*.
 Ichneumon galera et major, *Is. Geoff. St. Hil. Descrip. Egypt Hist. Nat.*, ii, p. 139 (1813).
 Atilax vansire, *F. Cuvier Hist. Nat. Mamm.*, livr. liv (1826).
 Herpestes paludinosus, *G. Cuvier Règne Anim.*, 2nd ed., i, p. 158 (1829).
 Mangusta urinatrix, *A. Smith Zool. Journ.*, iv, p. 437 (1829).
 Herpestes pluto, *Temminck Esquis. Zool.*, p. 95 (1853).
 Herpestes loempo, *Gray P. Z. S.*, p. 551 (1864).
 Athylax vansire et paludosus, *Gray P. Z. S.*, p. 557 (1864).
 Athylax robustus, *Gray P. Z. S.*, p. 558 (1864).
 Herpestes paludosus, *Blyth Cat. no.* 169, p. 52 (1863).
 Herpestes galera, *Thomas P. Z. S.*, p. 72 (1882).

Distribution.—Africa, south of the Sahara.

a. Stuffed	South Africa	E. L. Layard, 1859, A. S. B.
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Herpestes gracilis.

- Herpestes gracilis, *Rüppel N. Wirbelth.*, p. 29, pl. viii, fig. 2 (1835);
Thomas P. Z. S., 1882, p. 68.
 Herpestes muttigella, *Rüppel t. c.*, p. 29, pl. ix, fig. 1 (1835); *Blanford Abyssinia*, p. 234.
 Cynictis melanurus, *Martin P. Z. S.*, p. 56 (1836).
 Ichneumon ratlamuchi et cawi, *A. Smith App. Rep. S. Afr. Exp.*, p. 42 (1836)*.
 Ichneumia nigricaudatus, *Is. Geoff. St. Hil. Mag. de Zool.*, p. 18 (1839)*.
 Herpestes ochraceus, *Gray P. Z. S.*, p. 138, pl. viii (1848).
 Herpestes badius, *A. Smith S. African Zool.*, pl. iv. (1849).
 Herpestes galinieri, *Guérin Ferret and Galinier Voy. Abyss. Atlas Zool.*, pl. i (1850)*.
 Herpestes ornatus, *Peters Reise nach Mossambique Mamm.*, p. 117, pl. xxvi (1852).
 Herpestes ochromelas, *Pucheran Rev. Mag. Zool.* (2) vii, p. 393 (1855).
 Herpestes iodoprymnus, *Heuglin Nova Acta Acad. Leop. Caro.*, xxix, p. 23 (1861).
 Herpestes adailensis, *Heuglin Peterm. Mitth.*, p. 17 (1861).
 Calogale granti, *Gray P. Z. S.*, p. 561 (1864).
 Calogale venatica, *Gray t. c.*, p. 563 (1864).
 Galerella ochracea, *Gray t. c.*, p. 564 (1864).
 Herpestes mutscheltschela, *Heuglin Reise N. O. Afrika*, ii, p. 43 (1877)*.

Distribution.—Africa, south of the Sahara.

a. Skin	♀ Adagrat Tigre, Abyssinia, W. T. Blanford, 1868. 8,000 ft.
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- b. Skin ♀ Adegrat Tigre, Abyssinia, W. T. Blanford, 1868.
8,000 ft.
c. Skin ♂ Senafé Tigre, Abyssinia, W. T. Blanford, 1868.
7,500 ft.
d. Skin, skelet. ♀ Senafé Tigre, Abyssinia, W. T. Blanford, 1868.
8,000 ft.

Genus CROSSARCHUS.

Crossarchus, *F. Cuvier Hist. Nat. Mamm.* livr. xlvii (1825).

Crossarchus fasciatus.

Viverra ichneumon, pt. *Schreber Säugeth.*, iii, p. 430, pl. cxvi (1778).
Herpestes mungo, *Desmarest Mamm.*, i, p. 211 (1820).
Herpestes fasciatus, *Desmarest Dict. Sci. Nat.*, xxix, p. 58 (1823).
Ichneumon tenionotus, *A. Smith S. African Quart. Journ.*, ii, 114 (1835)*.
Mungos fasciatus, *Blyth Cat.* no. 160, p. 50 (1863).
Ariela taenionota, *Gray P. Z. S.*, p. 565 (1864).
Crossarchus fasciatus, *Thomas P. Z. S.*, p. 90 (1882).

Distribution.—South-East Africa, Caffraria to Mozambique.

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| a. Skin, skelet. ♀ | | Zoological Gardens, 1883. |
| b. Stuffed | Somali land | Messrs. Burton and Speke,
1855, A.S.B. |

Genus PROTELES.

Proteles, *Is. Geoff. St. Hil. Mem. Mus. Paris*, xi, p. 354 (1824).

Proteles cristatus.

Viverra cristata, *Sparrman Resa till Goda Hopps Udden*, p. 581 (1783)*.
Viverra hyaenoides, *Desmarest Mamm. Suppl.*, p. 538 (1822).
Proteles lalandi, *Is. Geoff. St. Hil. Mem. Mus. Paris*, xi, p. 371 (1824);
Gray Cat. Carn. Mamm., p. 214.
Proteles cristatus, *Blyth Cat.* no. 139, p. 44 (1863); *Flower P. Z. S.*, 1869,
p. 474, pl. xxxvi.

Distribution.—South Africa, Cape of Good Hope.

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| a. Skin, skull | South Africa | E. L. Layard, 1859, A.S.B. |
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Genus HYAENA.

Hyaena, *Zimmermann Spec. Geogr. Quad.*, p. 365 (1777).
Crocota, *Gray P. Z. S.*, p. 525 (1868). *Type*, *H. crocuta*.

Hyaena striata.

Canis hyaena, *Linnaeus Syst. Nat.*, 12th ed., i, p. 58 (1766).
Hyaena striata, *Zimmermann Geogr. Geschichte*, ii, p. 256 (1780); *Adams P. Z. S.*, 1858, p. 514; *Blyth Cat.* no. 138, p. 44; *Tristram P. Z. S.*, 1866, p. 91; *Ferdon Mamm.*, p. 118; *Gray Cat. Carn. Mamm.*, p. 212;

- McMaster Notes on Jerdon*, p. 34; *Stoliczka F. A. S. B.*, xli, p. 227; *Atkinson N. W. P. Gazett.*, xi, p. 18; *Blanford Persia*, p. 42; *Alston P. Z. S.*, 1877, p. 273, and 1880, p. 53; *Murray Zool. Sind*, p. 38; *Sterndale Mamm. Ind.*, p. 205; *Thomas P. Z. S.*, 1886, p. 56; *Blanford Mammals*, p. 132; *Radde Zool. F. B.*, iv, p. 1021.
Hyaena orientalis, *Tiedemann Zool.*, i, p. 350 (1808).
Hyaena fasciata, *Thunberg Kongl. Vetens. Akad. Handl.*, p. 59 (1820).
Hyaena antiquorum, *Temminck Ann. Gen. Sci. Phys.*, iii, p. 51 (1820)*.
Hyaena vulgaris, *Desmarest Mamm.*, p. 215 (1820); *Sykes P. Z. S.*, 1831, p. 102; *Elliot Madras Journ.*, x, p. 103; *Walker Calc. Journ. N. H.*, iii, p. 266; *Hutton F. A. S. B.*, xiv, p. 345.

The Striped Hyæna; Kirba, Kutkirba, Canarese; Turras, Mahrathi; Hondar, Lakrabagha, Jhirak, Bhagiah, Hindustani; Lankrabagh, Bengali; Renhra, Central India; Cherrag, Sind.

Distribution.—North Africa as far as the Senegal. Asia Minor, Palestine (Tristram), Euphrates valley, Baluchistan, Persia (Blanford), and Transcaspiæ. In India common in dry open country, *i.e.*, Sind (Murray), Kutch (Stoliczka); Kumaon submountain tracts (Atkinson), Southern India (Sykes and Elliot), and Assam? (Walker). Not found in Ceylon or east of the Bay of Bengal.

a. Skin, skull ♂	.....	Zoological Gardens, 1876.
b. Skin ♀	.....	Purchased, 1879.
c. Stuffed	.....	Barrackpore Menagerie, 1869.
d. Stuffed Benares, N.-W. P.	.....	Purchased, 1870.
e. Stuffed juv.	.....	L. C. Mullins, 1867.
f. Stuffed, skull Midnapur, Bengal juv.	.....	W. Rutledge, 1874.
g. Skeleton ♂	.....	Zoological Gardens, 1878.
h. Skeleton ♂ juv.	.....	No history.
j-l. 3 Skulls	.....	A. S. B.
m. Skull Agra, N.-W. P.	.....	J. Cockburn, 1881 [P.]
n-o. 2 Skulls Banda, N.-W. P.	.....	J. Cockburn, 1881.
p. Skull Manbhoom, Bengal	.....	R. C. Beavan, 1865, A.S.B.
q. Skull Agra, N.-W. P.	.....	J. Cockburn, 1879.
r. Skin nr. Benares, N.-W. P.	.....	No history.
s-v. 4 Skulls Banda dist., N.-W. P.	.....	J. Cockburn, 1881.

Hyaena crocuta.

- Canis crocuta*, *Erxleben Syst. Reg. Anim.*, p. 578 (1777).
Hyaena maculata, *Zimmermann, Spec. Geogr. Quad.*, p. 470 (1777).
Hyaena crocuta, *Zimmermann Geogr. Geschichte*, ii, p. 256 (1780); *Blyth Cat.*, p. 43; *Blanford Abyssinia*, p. 235.
Hyaena capensis, *Desmarest Mamm.*, p. 216 (1820).
Crocuta maculata, *Gray P. Z. S.*, p. 525 (1868); *id. Cat. Carn. Mamm.*, p. 213.

Distribution.—Africa, south of Sahara.

a. Skin, skull ♂	Abyssinian Highlands	W. T. Blanford.
b. Skull ♀	Somali land	Messrs. Speke and Burton, A.S.B.

Genus CUON.

Cuon, *Hodgson Ann. Mag. N. H.*, i, p. 152 (1838). *Type*, *C. dukhunensis*.
Chrysaëus, *H. Smith Jard. Nat. Libr.*, ix, p. 167 (1839). *Type*, *C. dukhunensis*.

The species of the family Canidae have been arranged as far as possible according to the system adopted by Prof. Huxley in his paper on the Canidae (*P. Z. S.*, 1880, p. 238); beginning with the higher Thoooids, the Wild Dogs and Wolves, then follow the Jackals and their allies, *Canis procyonides* being the lowest true Thoooid represented; the Alopecoid Series follows, beginning with the most highly developed foxes, *Vulpes alopec* and *Vulpes fulvus* and gradually descending to the microdont *V. bengalensis* and *V. caama*.

Cuon dukhunensis.

Canis javanicus, *Desmarest Mamm.*, p. 198 (1820).

Canis familiaris, var. *sumatrensis*, *Hardwicke Linn. Trans.*, xiii, p. 235, pl. xxiii (1822).

Canis dukhunensis, *Sykes P. Z. S.*, p. 100 (1831); *Blyth J. A. S. B.*, xi, p. 591.

Canis primævus, *Hodgson As. Res.*, xviii, pt. 2, p. 221, (1833); *Walker Calc. Journ. N. H.*, iii, p. 266.

Cuon primævus, *Hodgson Ann. Mag. N. H.*, i, p. 152 (1838); *id. Calc. Journ. N. H.*, ii, p. 205; *Gray Cat. Hodgs. Coll.*, 1st ed., p. 10; *Cantor J. A. S. B.*, xv, p. 196; *Horsfield Cat. E. I. Mus.*, p. 73; *Adams P. Z. S.*, 1858, p. 514; *Gray Cat. Carn. Mamm.*, p. 184; *Scully P. Z. S.*, 1881, p. 202.

Canis familiaris var., *Elliot Madr. Journ.*, x, p. 100 (1839).

Canis rutilans, *Müller Over de Zoogdieren in Tem. Verhandl.*, p. 17 (1839); *Blyth J. A. S. B.*, xlv, *Burma List*, p. 24.

Chrysaëus primævus, *H. Smith Jard. Nat. Lib.*, ix, p. 170 (1839).

Chrysaëus scylax, *id. ibid.*, p. 179 (1839).

Cuon dukhunensis, *Horsfield Cat. E. I. Mus.*, p. 73 (1851); *Gray Cat. Carn. Mamm.*, p. 186; *Blanford Mammals*, p. 143.

Cuon sumatrensis, *Horsfield Cat. E. I. Mus.*, p. 79 (1851); *Gray Cat. Carn. Mamm.*, p. 184.

Cuon rutilans, *Blyth Cat.*, p. 37 (1863); *Jerdon Mamm.*, p. 145; *Blanford J. A. S. B.*, xxxvi, p. 191; *McMaster Notes on Jerdon*, p. 42; *Atkinson N.-W. P. Gazett.*, xi, p. 21; *Lydekker J. A. S. B.*, xlv, p. 285; *Sterndale Mamm. Ind.*, p. 239; *Spearman Burma Gazett.*, p. 547; *Kinloch Large Game Shooting*, i, p. 17, with plate.

The Indian Wild Dog; Kohiya, Dhole, Jungli kutta, Hindustani; Kolsa, Mahratti; Buansu, in the Himalayas; Tawkhwe, Burmese; Ram hun, Kashmir; Sona kutta, Central India; Ban kutta, North India; Reza kutta, Adavi kutta, Telegu; Shennai, Malayalim; Eram naiko, Gond; Saddaki, Tibetan (Ladak); Suhutum, Lepcha; Paoho, Bhotia; Konaug, Assamese.

Distribution.—India generally, *i.e.*, Gilgit (Scully), West Himalayas (Adams), Central and Southern India (Jerdon), Nepal (Hodgson), Assam (Walker), Burma (Spearman), Malay Peninsula (Cantor), Sumatra (Hardwicke), Java and Borneo (Temminick).

There are said to be three varieties of Red wild dogs, which have been all classed together in the genus *Cuon*, *i.e.*, *C. dakhunensis* (= *primævus*), *C. javanicus* (= *C. familiaris* var. *sumatrensis* and *C. rutilans*), and finally, *C. alpinus*.

Following Scully, *C. alpinus* has been separated since it has a short upper sectorial compared with *C. dakhunensis*.

The Malayan form is considered distinct by Mr. Blanford in his recent work on Indian Mammals; it is said to be smaller and rather darker coloured. The above synonymy, however, refers to the Malay as well as the Indian variety.

a. Skin	♂ juv.	.....	Zoological Gardens.
b. Skin	♂	Chybassa, Bengal	A. Grote, Esq., 1856, A. S. B.
c. Skin	♀	.....	Zoological Gardens.
d. Skin, skull	♂	Banda dist., N.-W. P.	J. Cockburn [P.]
e. Skin, skull		Buxa, Doars	A. A., A. Kinloch.
f. Skin		Sikkim	L. Mandelli.
g. Skin		.....	No history, A. S. B.
h. Skin,		.....	Zoological Gardens.
skeleton.	♂ juv.		
j. Skin, skull		Sumatra ?	W. Rutledge.
k. Stuffed	♀	.....	Zoological Gardens.
l. Stuffed		Darjeeling	Messrs. Colvin Ainslie & Co., A. S. B.
m. Skeleton	♀	.....	A. S. B.
n. Skull		Nepal	B. H. Hodgson, A. S. B.
o. Skeleton		.....	No history.
p. Skin, skull		Chaprot, Gilgit	J. Scully.

Cuon alpinus.

Canis alpinus, Pallas *Zoog. Rosso As.*, i, p. 34 (1831); *Blyth Cat.*, p. 38; *Van der Hoven Verh. Kon. Akad. Amster.*, 1856, iii; *Schrenck Amurland Säugeth.*, p. 48, pl. ii; *Radde Ost Siberien*, p. 60; *Severtzoff Ann. Mag. N. H.* (4), xviii, p. 48.

Cuon alpinus, Gray *Ann. Mag. N. H.*, xvii, p. 293 (1846); *Gray Cat. Carn. Mamm.*, p. 184.

Distribution.—Siberia, Turkestan (Severtzoff), Amurland (Schrenck) and Thibet (I. M.), in fact the highlands of Central Asia. The specimen below may possibly be referred to *Cuon dukhunensis*.

a Stuffed Thibet Capt. Munro., 1845, A. S. B.

Genus *CANIS*.

Canis, Linnaeus *Syst. Nat.*, 12th ed., i, p. 56 (1766).

Sacculius, H. Smith, *Fard. Nat. Libr.*, ix, p. 206 (1839). *Type*, *Canis aureus*.

Lupus, H. Smith *Fard. Nat. Libr.*, ix, p. 129 (1839). *Type*, *Canis lupus*.

Oxygous, Hodgson *F. A. S. B.*, x, p. 908 (1841). *Type*, *Canis aureus*.

Key of the Indian Species.

a. Skull generally exceeds $7\frac{1}{2}$ inches in length; head and body 3 ft. to 3 ft. 6 in.; legs long.

- b.* The carnassial tooth exceeds in length the two posterior molars, a black stripe down the forelegs.

***C. lupus*, p. 262.**

- b*². The carnassial is either of the same length or else shorter than the two posterior molars.

- c.* Fur smooth, thin and fulvous, little or no under fur.

***C. pallipes*, p. 263.**

- c*². Fur soft and woolly, colour pale and isabelline, owing to the absence of black-tipped hairs on the flanks.

***C. laniger*, p. 262.**

- a*². Skull generally less than 6 inches in length; head and body about 2 feet 6 inches; legs short.

***C. aureus*, p. 264.**

***Canis lupus*.**

Canis lupus, *Linnaeus Syst. Nat.*, 12th ed., i, p. 58 (1766); *Hutton J. A. S. B.*, xiv, p. 345; *Blyth Cat.*, p. 39; *Schrenck Amurland Säugeth.*, p. 44; *Middendorff Siberische Reise*, ii, pt. ii, p. 70; *Severizoff Ann. Mag. N. H.* (4), xviii, p. 48; *Blanford Persia*, p. 37; id. *Yarkand Mammals*, p. 20; *Scully P. Z. S.*, 1881, p. 201; id. *Ann. Mag. N. H.* (5), viii, p. 224; id. *J. A. S. B.*, lvi, p. 69; *Thomas Linn. Trans.* (2), v, p. 57; *Blanford Mammals*, p. 135; *Radde Zool. J. B.*, iv, p. 1017.

Lupus vulgaris, *H. Smith Jard. Nat. Libr.*, ix, p. 148 (1839); *Gray Cat. Carn. Mamm.*, p. 186.

Distribution.—The Palearctic region generally, from France to Amurland, extending to Persia, Afghanistan, Baluchistan and Gilgit, and probably found in Western Sind and the Punjab.

<i>a.</i> Skin	Yarkand ?	<i>F. Stoliczka</i> , 1873.
<i>b.</i> Skin	Kashgar bazaar	<i>F. Stoliczka</i> , 1873.
<i>c.</i> Skin	Kashgar bazaar	<i>F. Stoliczka</i> , 1873.
<i>d.</i> Skin	Kashgar bazaar	<i>F. Stoliczka</i> , 1873.
<i>e.</i> Skin	Afghan-Turkestan	<i>C. E. Yate</i> , 1887.
<i>f.</i> Skull	Bushire	No history.
<i>g.</i> Skull	Bokhara ?	<i>Purchased</i> , 1872.
<i>h.</i> Skin, skull ♂	Khornor, Gilgit, 21-11-79	<i>J. Scully</i> .
<i>j.</i> Skin, skull ♂	Gilgit, 17-4-79	<i>J. Scully</i> .
<i>k.</i> Skin, skull ♀	Gilgit, 23-1-79	<i>J. Scully</i> .
<i>l.</i> Skull juv.	Gilgit	<i>J. Scully</i> .

***Canis laniger*.**

Canis laniger, *Hodgson Calc. Journ. N. H.*, vii, p. 474, (1847); *Blyth J. A. S. B.*, xvi, p. 1176; *Horsfield Ann. Mag. N. H.* (2), xvi, p. 107; *Blyth Cat.*, p. 39; *Gray Cat. Hodgs. Coll.*, 2nd ed., p. 5; *Blanford P. A. S. B.* 1877, p. 114; *Kinloch Large Game Shooting*, i, p. 15.

Canis chanco, *Gray P. Z. S.*, p. 94 (1863).

Lupus chanco, *Gray P. Z. S.*, p. 501 (1868); id., *Cat. Carn. Mamm.*, p. 187.

Canis niger, *P. L. Sclater P. Z. S.*, p. 654, pl. lxxviii (1874); *Blyth J. A. S. B.*, xvi, p. 1176; *Kinloch Large Game Shooting*, 2nd ed., p. 39.

Chanko and Chanko nagpo, (black var.) Thibetan.

Distribution.—Eastern (Hodgson) and Western Thibet (Kinloch) including Ladak.

Mr. Blanford in his recent work on Indian Mammals considers *Canis laniger* to be conspecific with *Canis lupus*; the differences as described are certainly not striking, but probably as marked as the differences between many other species; the difference formerly pointed out by Blanford, with regard to the sectorial being shorter than the two molars, is now said by him to be not constant.

The skin "h", which is in a very bad state of preservation, is the skin of the black wolf of Thibet (*c. f.* Blyth *J. A. S. B.*, xvi, p. 1176,) which was afterwards described by Mr. Sclater as *Canis niger*, from living specimens in the London Zoological Gardens.

It is probable that this black form is merely a variety of the typical form, similar to that of the European wolf which was described as *Canis lycaon* by Schreber.

a. Skin, skull.	Nanskar, Thibet	J. B. Lee.
b. Skin	Thibet	G. T. Lushington, A. S. B.
c. Stuffed	Thibet	G. T. Lushington, A. S. B.
d-g. 4 Skulls	Thibet	G. T. Lushington, A. S. B.
h. Skin	Thibet	R. Strachey, 1847, A. S. B.
(black var.).		
j. Skin	Phialung, Ladak,	S. J. Stone.
(black var.). 29-6-88.		

Canis pallipes.

Canis pallipes, *Sykes P. Z. S.*, p. 101 (1831); *Blyth Cat.*, p. 39; *Jerdon Mamm.*, p. 139; *Stoliczka J. A. S. B.*, xli, p. 227; *McMaster Notes on Jerdon*, p. 38; *Atkinson N.-W. P. Gazett.*, xi, p. 20; *Murray Zool. Sind*, p. 36; *Sterndale Mamm. Ind.*, p. 232; *Thomas P. Z. S.*, 1886, p. 56; *Blanford Mammals*, p. 137.

Canis lupus, *apud Elliot Madr. Journ.*, x, p. 101 (1839).

Lupus pallipes, *Gray P. Z. S.*, p. 504 (1868); id. *Cat. Carn. Mamm.*, p. 189.

The Indian wolf; Tola, Canarese; Landga, Deccani; Bherya nekra, Hundar, Hurar, Hindustani; Bigana, Bundelcund; Toralu, Telegu; Buggyar, Sind.

Distribution.—The Indian wolf is generally distributed over the whole of the Indian peninsula south of the Himalayas, more especially in the open country. Is recorded from Sind (Murray), Sambhar Lake (Thomas), Cutch (Stoliczka), Central Provinces (Jerdon) and South India (Elliot and Sykes).

a. Skin, skull	.....	Zoological Gardens.
♀ juv.		

b. Skin	.....	Purchased, 1870.
c. Skin	Pind Dadun Khan, Punj.	W. Theobald, 1854, A. S. B.
d. Skin	Chybassa, Bengal	S. R. Tickell, 1848, A.S.B.
e. Skin	.....	J. Anderson.
f. Stuffed	♀	Purchased, 1870.
g. Stuffed	♂	J. Anderson.
h. Skin	♂ juv. Agra dist., N.-W. P.	Agra Museum [Ex.]
j. Skin	♀ juv. Agra dist., N.-W. P.	Agra Museum [Ex.]
k. Skin	juv. Chaman, Baluchistan	J. A. Murray.
l. Skin, skull,	♂	Zoological Gardens.
	juv.	
m. Skin	♂ juv.	Zoological Gardens.
n. Skull	♂ Shiurajpur, N.-W.P.	J. Cockburn [P.]
o. Skull	juv. Agra dist., N.-W.P.	J. Cockburn [P.]
p. Skull	♀ Banda, N.-W. P.	J. Cockburn.
q. Skin	♀ juv. Agra dist., N.-W.P.	Agra Museum [Ex.]
r. Skin	♂ Purneah, Bengal	Zoological Gardens.
s. Skin	.....	Purchased, 1870.
t. Alc.	♂ Motihari dist., Behar	L. Cameron, 1882.
u. Alc.	♀ Motihari dist., Behar	L. Cameron, 1882.
v. Skeleton	♂ Banda dist., N.-W.P.	J. Cockburn, 1881.
w. Skull	.....	Agra Museum [Ex.]

Canis lagopus.

Canis lagopus, *Linnaeus Syst. Nat.*, 12th ed., i, p. 59 (1766).

Canis fuliginosus, *Shaw Genl. Zool.*, i, p. 331 (1800).

Vulpes lagopus, *Audubon and Bachman Quad.N. Amer.*, ii, p. 89 (1829)*;
Blyth Cat. no. 129.

Leucocyon lagopus, *Gray P. Z. S.*, p. 521 (1868).

Distribution.—Arctic regions of both continents.

a. Skin, skull	♂	.....	W. Rutledge 1874.
b. Stuffed		Arctic regions	Christiania University, 1844, A. S. B.
c. Skull		.....	Royal Acad. Copenhagen, 1839, A. S. B.
d. Skull	♂	Arctic regions	W. Rutledge.
e. Skull	♀	Lapland	Stockholm Mus. [Ex.]

Canis aureus.

Canis aureus, *Linnaeus Syst. Nat.*, 12th ed., i, p. 59 (1766); *Sykes P. Z. S.*, 1831, p. 101; *Elliot Madras Journ.*, x, p. 101; *Gray Cat. Hodgs. Coll.*, 1st ed., p. 11; *Horsfield Cat. E. I. Mus.*, p. 80; *Kelaart Prodr. Faun. Zeylan.*, p. 30; *Blyth J. A. S. B.*, xxiv, p. 471; *Adams P. Z. S.* 1858, p. 515; *Blyth Cat.*, p. 40; *Tristram P. Z. S.*, 1866, p. 91; *Jerdon Mamm.*, p. 142; *McMaster Notes on Jerdon*, p. 41; *Stoliczka J. A. S. B.*, xli, p. 227; *Blanford Persia*, p. 37; *Blyth J. A. S. B.*, xlv, *Burma list*, p. 25; *Atkinson N.-W. P., Gazett.*, xi, p. 20; *Alston P. Z. S.*, 1877, p. 273 and 1880, p. 53; *Murray Zool. Sind*, p. 35; *Sterndale Mamm. Ind.*, p. 237; *Thomas P. Z. S.*, 1886, p. 56; *Thomas Linn. Trans.* (2), v, p. 57; *Blanford Mammals*, p. 140; *Radde Zool. J. B.*, iv, p. 1017.

Canis barbarus, *Shaw Genl. Zool.*, i, p. 311 (1800).
Canis aureus indicus, *Hodgson As. Res.*, xviii, pt. ii, p. 237 (1833).
Saccalius aureus, *H. Smith Fard. Nat. Libr.*, ix, p. 214 (1839).
Saccalius barbarus, *H. Smith Fard. Nat. Libr.*, ix, p. 218 (1839).
Oxygous indicus, *Hodgson J. A. S. B.*, x, p. 908 (1841).
Lupus aureus, *Gray Cat. Carn. Mamm.*, p. 188 (1867).

The Jackal ; Nari, Canarese ; Kolah, Shighal, Deccani and Mah-ratti ; Nareeah, Cingalese ; Gidhur, Hindustani ; Sheal, Sial, Shialu, Bengali ; Srigal, Sanskar, Syar, Nepalese ; Nakka, Telegu ; Nerka, Gond ; Amu, Bhotea ; Tholuk, Mekranees ; Mye-khwe, Burmese.

Distribution.—South-East Europe, North Africa and Egypt, Asia Minor (Alston), Persia (Blanford), India, Assam, Burma (Blyth and Spearman) ; in India is found everywhere from the Himalayas to Cape Comorin and also in Ceylon ; in Burma it has been recorded as far south as Moulmein.

a. Skin	♂	Agra dist., N.-W. P.	Agra Mus. 1870 [Ex.]
b. Skin	♀	Agra dist., N.-W. P.	Agra Mus. 1870 [Ex.]
c. Skin		Manbhoom	R. C. Beavan,
d. Skin, skull		.....	Babu H. Mullick.
(white var.)			
	♀		
e. Skin, skull		.....	Zoological Gardens.
(white var.)			
	♀		
f. Skin, skull		.....	Barrackpore Menagerie.
(black var.)			
g. Skin		Burma	J. Anderson.
h. Skin, juv.		Calcutta	No history, A. S. B.
i. Skull	♀	Nepal	No history, A. S. B.
k. Skull		.....	No history, A. S. B.
l. Skull		.. ..	No history, A. S. B.
m. Skull		.....	No history, A. S. B.
n. Skull		Sadiya, Assam	J. Cockburn [P.]
o. Skull		Botanical Gardens, Calcutta.	J. Anderson, 1873.
p. Skull		Agra, N.-W. P.	J. Cockburn [P.]
q. Skull		Banda dist., N.-W. P.	J. Cockburn.
r. Skeleton	♂	.....	No history.
s. Stuffed		Calcutta	Purchased, 1870.
(dark var.)			
t. Stuffed	♂	Calcutta	J. Anderson, 1869.
u. Stuffed (Pyrrhous var.)		Calcutta	W. Stalkart, 1843, A. S. B.
v. Stuffed		.....	Maharaja of Burdwan, 1859, A.S.B.
(white var.)			
w. Skeleton		.....	No history.
x. Stuffed juv.		Calcutta	No history, A. S. B.
y. Skeleton		.....	Purchased.
z. Skin	♂	.....	No history, A.S.B.
a ² . Skin		Shiraz, Persia	Sir O. B. C. St. John.
b ² . Skin, skull	♀	Bampur, Baluchistan, 2,000 ft.	W. T. Blanford, 1872.
c ² . Skin, skull		Ceylon	Colombo Museum.
d ² . Skin	♀	Nepal	J. Scully.

Canis mesomelas.

Canis mesomelas, *Schreber Säugeth.*, iii, p. 370, pl. xcv (1778); *Blanford Abyssinia*, p. 237.

Vulpes mesomelas, *Gray P. Z. S.*, p. 516 (1868); *id. Cat. Carn. Mamm.*, p. 203.

Distribution.—South and East Africa, Abyssinia and the Cape of Good Hope.

a. Skin, skull ♂ Zoological Gardens.

Canis variegatus.

Canis variegatus, *Cretzschmar Rüppell's Atlas*, p. 31, pl. x (1826); *Blyth Cat.*, p. 40; *Blanford Abyssinia*, p. 238.

Vulpes variegata, *Gray P. Z. S.*, p. 516 (1868); *id. Cat. Carn. Mamm.*, p. 203.

Distribution.—Upper Egypt, Nubia and Abyssinia to Somali land.

a. Skin	♀ Hulai, Abyssinia	W. T. Blanford.
b. Stuffed	Somali land	Messrs. Burton and Speke, 1855, A. S. B.

Canis procyonoides.

Canis procyonoides, *Gray Illustr. Ind. Zool.*, ii, pl. i (1833); *Schrenck Amurland Säugeth.*, p. 53.

Nyctereutes procyonoides, *Gray List Mamm. B. M.*, p. 62 (1843); *Swinhoe, P. Z. S.*, 1870, p. 631.

Nyctereutes viverrinus, *Temminck & Schlegel Faun. Jap. Mamm.*, p. 40, pl. viii (1850).

Distribution.—Eastern Asia from Amurland to Canton, Japan (Temminck), but not Formosa.

a. Skin, skull ♂ Zoological Gardens.

Canis familiaris.

Canis familiaris *Linnaeus Syst. Nat.*, 12th ed., i, p. 56 (1766); *Blyth Cat.*, p. 38; *Gray Cat. Carn. Mamm.*, p. 193.

Var.—dingo.

Canis dingo, *Shaw Genl. Zool.*, i, p. 277 (1800); *Gould Mamm. Austr.*, iii, pls. li, lii.

Canis familiaris var. *australasiæ*, *Lesmarest Mamm.*, p. 191 (1820).

Chrysaeus australiæ, *H. Smith Jard. Nat. Libr.*, ix, p. 188, pl. x (1839).

Distribution.—Cosmopolitan in a domestic state; the dingo is confined to Australia, and may perhaps be considered a distinct species.

a. Skin	Yunnan	J. Anderson.
b. Skin	Kashgar	F. Stoliczka.
c. Skin	♀ Japan	Dr. Tonnerre.
d. Skull	India (pariah)	G. T. Lushington, A. S. B.
e. Skull	India (pariah)	G. T. Lushington, A. S. B.
f. Skull	India	A. Masters, 1845, A. S. B.
g. Skull	India (spaniel)	A. Masters, 1845, A. S. B.
h. Skull	Formosa	R. Swinhoe, 1859, A. S. B.
i. Skull	Amoy	R. Swinhoe, 1859, A. S. B.
k. Skull	(Bulldog ?)	A. S. B.
l. Skin, skull	♂ Bhutan	T. R. Doucett.
m. Skull	(Greyhound)	J. Cockburn [P.]
n. Skull	Allahabad, N.-W. P.	J. Cockburn [P.]
o. Skull	Dhappa, Calcutta	Museum Collector.
p. Skull	Cherra Poonjee, Assam.	H. H. Godwin-Austen, 1868.
q. Skull	China (pug)	No history.
r. Skin and skeleton.	China (pug)	F. Day, 1869.
s. Skeleton	♂ (Hybrid kangaroo hound and retriever).	No history, 1868.
t. Skin	♂ India	T. R. Doucett.
u. Skull	Japan (pug)	Dr. Tonnerre.
v. Alc.	♀ juv. (Yorkshire terrier)	W. Rogerson.

Var.—dingo.

a. Skin	.....	Zoological Gardens.
b. Stuffed	Australia	A. Grote, 1864, A. S. B.
c. Skull	South Australia	Adelaide Mus. [Ex.]
d. Skull	Australia	C. Hollings, 1856, A. S. B.

Genus **VULPES.**

Vulpes, *Brisson Regnum animale* (1758)*. *Type*, *V. alopes*.
Cynalopes, *H. Smith Fard. Nat. Libr.*, ix, p. 222 (1839).

Key of the Indian Species.

- a. Of large size, fur soft and thick, ears black, skull with large carnasial teeth, brush white-tipped.
 b. Large, tarsus about 6 inches; skull about $5\frac{1}{2}$ inches in length, carnasial teeth long.

V. alopes var. montanus, p. 268.

- b². Smaller, tarsus 4 to 5 inches, skull about $4\frac{3}{4}$ inches in length, carnasial teeth short.

V. leucopus, p. 270.

- a². Of small size, skull about $3\frac{1}{2}$ inches, brush black-tipped, ears grey outside.

V. cana, p. 274.

a^3 . Small, fur rather harsh, ears not black, skull small with small carnassial teeth.

c . Brush black-tipped, body concolorous.

V. bengalensis, p. 271.

c^2 . Brush white-tipped, back reddish, sides grizzled iron gray.

V. ferrilatus, p. 272.

Vulpes alopecus.

Var. A.—typicus.

Canis vulpes Linnaeus *Syst. Nat.*, 12th ed., i, p. 59 (1766).

Canis alopecus, Linnaeus *Syst. Nat.*, 12th ed., i, p. 59 (1766).

Vulpes melanogaster, *Pr. Bonaparte Iconog. Faun. Ital.* no. 1, pl. i (1832).

Vulpes vulgaris, *Gray List Mamm. B. M.*, p. 59 (1842); *Blyth Cat.*, p. 42.

Vulpes alopecus, *Blanford P. Z. S.*, p. 635 (1887); *id. Mammals*, p. 153.

Var. B.—fulvus.

Canis fulvus, *Desmarest Mamm.*, p. 203 (1820).

Vulpes fulvus, *Dekay New York Zool.*, p. 44, pl. vii, fig. 1 (1842).

Var. C.—montanus.

Canis (Vulpes) montana, *Pearson J. A. S. B.*, v, p. 313 (1836).

Vulpes himalaicus, *Ogilby P. Z. S.*, p. 103 (1836).

Vulpes nipalensis, *Gray Charlesw. Mag. N. H.*, i, p. 578 (1837).

Vulpes montanus, *Blyth J. A. S. B.*, xi, p. 589 (1842); *Gray Cat. Hodgs.*

Coll., 1st ed., p. 12; *Horsfield Cat. E. I. Mus.*, p. 87; *Blyth J. A. S. B.*,

xxiii, p. 730; *Adams P. Z. S.*, 1858, p. 516; *Blyth Cat.*, p. 42; *Ferdon*

Mamm., p. 152; *Lydekker J. A. S. B.*, xlv, p. 285; *Blanford J. A. S. B.*,

xlvi, p. 323; *id. ibid.*, xlviii, p. 95; *Scully P. Z. S.*, 1881, p. 202; *id.*

Ann. Mag. N. H. (5), viii, p. 225; *id. J. A. S. B.*, lvi, p. 69.

Vulpes flavescens, *Gray Ann. Mag. N. H.*, xi, p. 118 (1843); *id. Cat. Hodgs.*

Coll., 1st ed., p. 11; *Horsfield Cat. E. I. Mus.*, p. 86; *Adams P. Z. S.*,

1858, p. 516; *Blyth Cat.*, p. 42; *Blanford Yarkand Mammals*, p. 22,

pl. ii.

Vulpes alopecus, *Blanford P. Z. S.*, p. 635 (1887); *id. Mammals*, p. 153.

The Mountain Fox; Loh of Kashmir; Wamu of Nepal.

Distribution.—The typical variety is found throughout the Palearctic region from England to Siberia; var. *fulvus* is found throughout the Nearctic region in the States and Canada; and var. *montanus* is distributed over the Himalayas from Sikkim to Kashmir, Eastern Turkestan (Blanford), Candahar (Scully), Upper Burma (Anderson)?

The skulls of Indian foxes present little or no points of difference except in actual size, and in the proportions of the teeth, thus in a series formed by *V. bengalensis* and passing up through *V. leucopus* and *V. griffithii* to *V. montanus* there can be traced

(1) a gradual increase in size of the upper and lower sectorial,
 (2) a decrease in length and increase in breadth of $\frac{m_1}{1}$; this is well shown in the following table of measurements of 4 typical skulls of the four species, the total length of the skull being reduced in each case to 1,000 after Huxley's method:—

	Total length.	$\frac{p.m. 4}{\text{length.}}$	Length $\frac{m 1}{\text{.}}$	Width $\frac{m 1}{\text{.}}$	Length $\frac{m 1}{\text{.}}$	Length of skull in inches.
V. montanus .	1,000	110	70	96	128	5.50
V. griffithii .	1,000	100	76	92	116	4.95
V. leucopus .	1,000	96	75	88	117	4.70
V. bengalensis .	1,000	86	77	86	106	4.10

Var. A.—typicus.

a. Stuffed	England	A. D. Bartlett, 1843, A. S. B.
b. Skeleton	.....	J. H. Gurney, 1860, A. S. B.
c-e. 3 Skulls	England	A. D. Bartlett, A. S. B.

Var. B.—fulvus.

a. Skin	Lucknow Ont., Canada	J. H. Garnier.
b. Skin	Lucknow Ont., Canada	J. H. Garnier.
c. Skull	Upton Maine, U. S. A.	J. G. Rich, A. S. B.

Var. C.—montanus.

a. Skin	juv. Kashgar bazaar	F. Stoliczka, 1873.
b. Skin	Yarkand bazaar	F. Stoliczka, 1873.
c. Skin	Kashgar bazaar	F. Stoliczka, 1873.
d. Skin	Kashgar bazaar	F. Stoliczka, 1873.
e. Skin	Kashgar bazaar	F. Stoliczka, 1873.
f. Skin	Kashgar bazaar	F. Stoliczka, 1873.
g. Skin, skull	Kashgar bazaar	F. Stoliczka, 1873.
h. Skin, skull	Gilgit	J. Biddulph.
j. Skin, skull	Gilgit	J. Biddulph.
k. Skin, skull	Moralbashi	J. Biddulph, 1874.
l. Skin, skull	Chenab poel, Ramban	J. Biddulph.
m. Skin	Afghan Turkestan	C. E. Yate.
n. Skin	Afghan Turkestan	C. E. Yate.
o. Skin	Turkestan	C. Ellis.
p. Skin, skull	Gilgit, 5,000 ft.	G. M. Giles.
q. Skin, skull	Gilgit, 5,000 ft.	G. M. Giles.
r. Skin	Leh	No history.
s. Skin	Leh	No history.
t. Skin, skull	.....	Purchased, 1871.
u-y. 5 Skins	.....	Purchased, 1871.
z. Skin, skull	Yarkand	J. Biddulph.

<i>a</i> ² . Skin	Hunza, 8,000 ft.	J. Biddulph.
<i>b</i> ² . Stuffed	Thibet	G. T. Lushington, 1847, A. S. B.
<i>c</i> ² . Stuffed	Thibet	G. T. Lushington, 1847, A. S. B.
<i>d</i> ² . Stuffed, skull	North-West Himalayas	J. T. Pearson, 1835, A.S.B.

[Type of *Canis (Vulpes) montana*, Pearson.]

<i>e</i> ² . Stuffed	.. ..	Purchased, 1871.
<i>f</i> ² . Skull	.....	A. S. B.
<i>g</i> ² . Skull	♂	No history, A. S. B.
<i>h</i> ² . Skull	.....	Purchased, 1872.
<i>j</i> ² . Skull	.....	Purchased, 1872.
<i>k</i> ² . Skin, skull	Mormien, Yunnan, juv. 4,500 ft.	J. Anderson, 1868.
<i>l</i> ² . Skull	.....	No history.
<i>m</i> ² . Skin, skull	Gilgit dist., 25-12-79	J. Scully.
<i>n</i> ² . Skin, skull	♂ Gilgit dist., 4-3-80	J. Scully.
<i>o</i> ² . Skin, skull	♂ Gilgit dist., 1-8-79	J. Scully.
<i>p</i> ² . Skin, skull	♂ Gilgit dist., 8-12-79	J. Scully.
<i>q</i> ² . Skin, skull	♀ Gilgit dist., 7-4-79	J. Scully.
<i>r</i> ² . Skin	♀ Gilgit dist., 15-11-78	J. Scully.
<i>s</i> ² . Skin	Shaiot, Gilgit, 1-80	J. Scully.
<i>t</i> ² . Skin	Chaprot, Gilgit, 1-80	J. Scully.
<i>u</i> ² . Skin, skull	♂ Chitral (J. Biddulph), 5,000 ft., 7-11-78.	J. Scully.
<i>v</i> ² . Skin, skull	Bunji, Indus valley, 4,000 ft., 1-79.	J. Scully.
<i>w</i> ² . Skin	juv. Sinjah, Punjab, 29-5-79.	J. Scully.
<i>x</i> ² . Skin, skull	♂ Gilgit, 4-4-80	J. Scully.

Vulpes leucopus.

Vulpes flavescens, *apud Blyth* *J. A. S. B.*, xiv, p. 344 (1845).
Vulpes leucopus, *Blyth* *J. A. S. B.*, xxiii, p. 729 (1854); *id. ibid.*, xxv, p. 443;
id. ibid., xxvi, p. 239; *id. Cat.*, p. 43; *Ferdon Mamm.*, p. 151; *Stoliczka*
J. A. S. B., xli, p. 228; *Murray Zool. Sind*, p. 37; *Thomas P. Z. S.*,
1886, p. 56; *Blanford Mammals*, p. 151.
Vulpes pusillus, *Blyth* *J. A. S. B.*, xxiii, p. 729 (1854); *Blyth Cat.* no. 133,
p. 43; *Ferdon Mamm.*, p. 153; *Adams P. Z. S.*, 1858, p. 516.
Vulpes griffithii, *Blyth* *J. A. S. B.*, xxiii, p. 730 (1854); *id. Cat.* no. 134, p. 43;
Scully Ann. Mag. N. H. (5), viii, p. 226.
Vulpes persicus, *Blanford Ann. Mag. N. H.* (4), xvi, p. 310 (1875); *id.*
Persia, p. 39, pl. ii.

Distribution.—The dry parts of North-West India, *i.e.*, the Punjab, Rajputana, Sind and Cutch, extending through Afghanistan and Baluchistan to Persia; Blanford also records it from Arabia.

This species, from which *V. pusillus*, *V. griffithii* and *V. persicus* cannot be separated, is closely allied to the foregoing *V. mon-*

tanus from which it differs solely in respect of size; it seems to occur rather in the lower ranges of the hills and also quite down on the plains in the north and north-west of India.

a. Skin		Punjab Salt Range	W. Theobald, 1853, A.S.B.
b. Skin	♂	nr. Sehwan, Sind	W. T. Blanford, 1875.
c. Skin	♂	Khairpur, Sind	W. T. Blanford, 1875.
d. Skin	♂	nr. Rohri, Sind	W. T. Blanford, 1875.
e. Skin	♀	.....	Zoological Gardens.
f. Skin		.....	Purchased, 1871.
g. Skin	♂	Agra dist., N.-W. P.	Agra Mus. [Ex.], 1870.
h. Skin	♀	Agra dist., N.-W. P.	Agra Mus. [Ex.], 1870.
j. Skin		.....	Purchased, 1871.
k. Skin	juv.	Bushire ?	Karachi Mus.
l. Stuffed, skull		Punjab Salt Range	W. Theobald, 1853, A.S.B.

[Type of *V. pusillus*, Blyth.]

m. Stuffed		North-West India	A.S.B.
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[Type of *V. leucopus*, Blyth.]

n. Stuffed		North-West India	D. Scott, 1857, A.S.B.
o. Skull		North-West India	? A.S.B.
p. Skeleton		nr. Rohri, Sind	W. T. Blanford.
q-r. 2 Skins and ♂ skulls.	♂	Quetta	Sir O. B. St. John, 1888.
s-t. 2 Skins and ♀ skulls.	♀	Quetta	Sir O. B. St. John, 1888.
u. Skin		Afghanistan	T. Hutton, A.S.B.
v. Skin, skull		Ispahan	Sir O. B. St. John.

[Type of *V. persicus*, Blanford.]

w. Stuffed, skull		Afghanistan	T. Hutton, A.S.B.
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[Type of *V. griffithii*, Blyth.]

x. Skin		Afghanistan ?	W. Griffith.
y. Stuffed		Candahar	T. Hutton, 1844, A.S.B.

Vulpes bengalensis.

Canis bengalensis, *Shaw Genl. Zool.*, i, p. 330 (1800); *Elliot Madr. Journ.*, x, p. 102; *Walker Calc. Journ. N. H.*, iii, p. 266.
Canis kokree, *Sykes P. Z. S.*, p. 101 (1831); *Gray Illustr. Ind. Zool.*, ii, pl. ii.
Vulpes rufescens, *Gray Illustr. Ind. Zool.*, ii, pl. iii (1833).
Canis (Vulpes) indicus, *Hodgson As. Res.*, xviii, pt. ii, p. 237 (1833).
Canis chrysurus, *Gray Charlesw. Mag. N. H.*, i, p. 577 (1837).
Cynalopex insectivorus, *H. Smith Fard. Nat. Libr.*, ix, p. 229 (1839).
Vulpes bengalensis, *Gray Cat. Hodgs. Coll.*, 1st ed., p. 11 (1846); *Horsfield Cat. E. I. Mus.*, p. 84; *Adams P. Z. S.*, 1858, p. 515; *Gray Cat. Carn. Mamm.*, p. 204; *Ferdon Mamm.*, p. 149; *McMaster Notes on Ferdon*, p. 45; *Stoliczka J. A. S. B.*, xli, p. 228; *Atkinson N.-W. P. Gazett.*, xi, p. 22; *Murray Zool. Sind*, p. 36; *Sterndale Mamm. Ind.*, p. 243; *Thomas P. Z. S.*, 1886, p. 56; *Blanford Mammals*, p. 148.
Cynalopex bengalensis, *Blyth Cat.* no. 126, p. 41 (1863).

The Indian Fox; Lomri, Hind.; Lomer in Nepal; Lokerie in Central India; Khek-siyali, Bengali; Khekar in Behar; Kokree, Mahratti; Konk, Kempnari or Chandak nari, Canarese; Konka nakka or Gunta nakka, Telegu.

Distribution.—Found throughout India in the open country from the Himalayas to Cape Comorin. Not found west of Sind, rare in Assam; not known from Burma or Ceylon.

a. Skin	♀	.....	Agra Mus. [Ex.], 1870.
b. Skin		nr. Calcutta	A.S.B.
c. Skin	♀	Base of Sehwan hills, Sind.	W. T. Blanford, 1877.
d. Skin	♂	Agra dist.	Agra Mus. [Ex.], 1870.
e. Skin		.....	Purchased, 1869.
f. Skin		Manbhoom, Beng.	R. C. Beavan, 1869.
g. Skin	♀	nr. Rohri, Sind	W. T. Blanford.
h. Skin		Sehwan, Sind	Karachi Mus. [Ex.]
i. Skin juv.	♂	.....	S. F. Holquette.
k. Skin juv.	♂	.....	S. F. Holquette.
l. Skin juv.	♂	Agra dist.	Agra Mus. [Ex.], 1870.
m. Skin juv.	♀	Agra Dist.	Agra Mus. [Ex.], 1870.
n. Stuffed, skull		Calcutta dist.	A.S.B.
o. Stuffed, skull		.....	A.S.B.
p. Skeleton		.....	A.S.B.
q. Skull		.....	A.S.B.
r. Stuffed juv.		Calcutta	A.S.B.
s. Skin, skull	♀	Agra dist., N.-W.P.	A. C. L. Carlyle, 1870.
t. Skin, skull		Deoli, Rajputana	J. Biddulph, 1887.
u. Skin, skull		Deoli, Rajputana	J. Biddulph, 1887.
v. Skull		Banda dist., N.-W. P.	J. Cockburn.
w. Skin	♂	Residency Katmundu, 14-11-77.	J. Scully.
x. Skin	♀	Ranijangal, Nepal valley, 28-2-78.	J. Scully.
y-z. 2 Skins	♂ ♀	Shahpur, Punjab, 10-88	G. Henderson.

Vulpes ferrilatus.

Vulpes ferrilatus, Hodgson *J. A. S. B.*, xi, p. 278, with plate (1842); *Gray Cat. Hodgs. Coll.*, 1st ed., p. 12; *Gray Cat. Carn. Mamm.*, p. 204; *Stoliczka J. A. S. B.*, xxxvii, p. 5; *Blanford Mammals*, p. 155.

Cynalopex ferrilatus, Blyth *Cat.* no. 127, p. 41 (1863).

Distribution.—Thibet near Llassa; has been recorded by Stoliczka from the Upper Sutlej valley.

a. Skin	juv.	Thibet?	A. Campbell, 1853, A.S.B.
b. Skin		.....	No history, A.S.B.
c. Stuffed		Thibet?	A. Campbell, 1853, A.S.B.

Vulpes cana.

Vulpes canus, Blanford *J. A. S. B.*, xlvii, p. 321 (1877); *P. L. Sclater P. Z. S.* 1878, p. 392; *Blanford Mammals*, p. 150.

Distribution.—Baluchistan and Southern Afghanistan, possibly extending to Sind.

[No specimen in the Museum.]

Vulpes caama.

Canis caama, *A. Smith S. African Quart. Journ.* (1833)*.

Megalotis caama, *H. Smith Jard. Nat. Libr.*, ix, p. 236 (1839); *Blyth Cat.* no. 128, f. 41.

Vulpes caama, *Gerrard Cat. Bones B. M.*, p. 87 (1862).

Fennecus caama, *Gray P. Z. S.*, p. 520 (1868); *id. Cat. Carn. Mamm.*, p. 207.

Distribution.—South Africa.

a. Stuffed

South Africa

E. L. Layard, 1859, A. S. B.

Vulpes virginiana.

Canis virginianus, *Gmelin Syst. Nat.*, i, p. 74 (1788).

Canis cinereo-argentatus, *Schreber Säugeth.*, iii, p. 360 t. xcii (1778).

Vulpes virgineana, *Dekay New York Zool.*, p. 45 (1842); *Blyth Cat.* no. 136, p. 43.

Urocyon virgineanus, *Gray P. Z. S.*, 1868, p. 522; *id. Cat. Carn. Mamm.*, p. 209.

Distribution.—North America, from New England to Costa Rica.

a. Stuffed.

North America.

E. Rüppel, 1885, A. S. B.

Genus MUSTELA.

Mustela, *Linnæus Syst. Nat.*, 12th ed., i, p. 66 (1766).

Martes, *Nilsson Skand. Faun.*, 1st ed., i, p. 41 (1820)*.

Key of the Indian Species.

a. Blackish brown, with very thick under fur; throat white; tail without hair, one half the length of the head and body.

M. foina, p. 275.

a². Yellowish; head, neck, rump and legs black; tail without hair, three-fourths the length of the head and body.

M. flavigula, p. 273.

Mustela flavigula.

Mustela flavigula, *Boddaert Elench. Anim.*, i, p. 88 (1785)*; *Cantor F. A. S. B.*, xv., p. 194; *Thomas P. Z. S.*, 1886, p. 67; *Blanford Mammals*, p. 158.

Viverra quadricolor, *Shaw Genl. Zool.*, i, p. 429 (1800).

Mustela leucotis, *Griffith An. King.*, ii, p. 297 (1827).

Mustela hardwickii, *Horsfield Zool. Journ.*, iv, p. 238, pl. viii (1828); *Müller Over de Zoogdieren in Tem. Verhandl.*, p. 30.

Martes flavigula, Hodgson *J. A. S. B.*, vi, p. 560 (1837); *Gray Cat. Hodgs. Coll.*, 1st ed., p. 12; *Horsfield Cat. E. I. Mus.*, p. 98; *Blyth J. A. S. B.*, xxvi, p. 316; *Adams P. Z. S.*, 1858, p. 516; *Blyth Cat.*, p. 67; *id. P. Z. S.*, 1864, p. 485; *Ferdon Mamm.*, p. 82; *Radde Ost Siberien*, i, p. 19; *Gray Cat. Carn. Mamm.*, p. 86; *Swinhoe P. Z. S.*, 1870, p. 623; *Blanford J. A. S. B.*, xlvii, p. 150; *Blyth J. A. S. B.*, xlv, *Burma List*, p. 29. *Galidictis chrysogaster*, *H. Smith Fard. Nat. Libr.*, xiii, p. 167, pl. vii (1842). *Martes gwatkinsii*, *Horsfield Cat. E. I. Mus.*, p. 99 (1851); *Blyth J. A. S. B.*, xxvi, p. 316.

The Indian Marten; Mul sumpra, Nepal; Tutural or Chitrala, in Kumaon; Huniah, Bhotia; Sekku, Lepcha; Surmar, Khasia hills; Takere Mahee in Assam.

Distribution.—The Himalayas from Kashmir (Adams), to Assam, Southern India on the Nilgiris and Travancore hills; the hills of Burma, Tenasserim and the Malay Peninsula and the islands of Java? and Sumatra, it has also been procured from Amurland by Radde and from Formosa by Swinhoe, and is therefore probably found throughout China.

The Malayan race is very much paler than the common Indian race; the head being very little darker than the back; in the Indian race the head is very dark and contrasts strongly with the back and throat; the skulls present no points of difference.

a. Skin		Sikkim	L. Mandelli.
b. Skin		Sikkim	L. Mandelli.
c. Skin	juv.	Sikkim	L. Mandelli.
d. Skin		Sikkim	L. Mandelli.
e. Skin		Sikkim	L. Mandelli.
f. Skin		Sikkim	L. Mandelli.
g. Skin		Samagooting, Assam	J. Butler, 1872.
h. Skin		Samagooting, Assam	J. Butler, 1872.
i. Skin		Assam	F. Day [P.].
k. Skin		Sibsagar, Assam	S. E. Peal.
l. Skin		Naga hills, Assam	H. W. Chennell.
m. Skin		Kashmir	J. E. T. Aitchison.
n. Skin		Salt Range, Punj.	Capt. Bengough, 1867.
o. Skin		Mussoorie, N.-W. P.	L. C. Stewart, A.S.B.
p. Skin, skull		Malacca	R. W. G. Frith, A.S.B.
q. Skin		Malacca	R. W. G. Frith, A.S.B.
r. Stuffed		Himalayas	F. Stoliczka, 1869.
s. Stuffed		Arakan	Sir A. Phayre, 1844, A.S.B.
t. Skull	♀	Assam	No history, A.S.B.
u. Skull	♀	West Himalayas	No history, A.S.B.
v. Skull	♀	.....	A.S.B.
w. Skull	♀	.....	W. Rutledge.
x. Skin	♂	Nepal, 26-7-79	J. Scully.
y. Skin		Nimbotar, Nepal, 16-12-77.	J. Scully.
z-a ² . 2 Skins		Simla	E. C. Cotes, 1888.

Mustela martes

Mustela martes, *Linnaeus Syst. Nat.*, 12th ed., i, p. 67 (1766); *Severtzoff Ann. Mag. N. H.* (4), xviii, p. 45; *Schrenck Amurland Säugeth.*, p. 36.

Marte sylvatica, Nilsson *Skand. Faun.*, i, p. 41 (1820)*; *Alston P. Z. S.*, 1879, p. 468.

Martes vulgaris, *Griffith An. Kingd.*, v, p. 123 (1827).

Martes abietum, *Fleming Brit. Anim.*, p. 14 (1828)*; *Blyth Cat.* no. 193, p. 66; *Gray Cat. Carn. Mammals*, p. 81.

The Pine Marten.

Distribution.—England and Northern Europe, Northern Asia, i.e., Turkestan (Severtzoff), and Amurland (Schrenck).

a. Skin	.....	British Mus. [Ex.]
b. Stuffed, skull	Norway	Christiania University, 1846, A.S.B.
c. Skin, skelet.	.....	W. Rutledge.

Mustela foina.

Mustela foina, *Erxleben Syst. Regn. Anim.*, p. 458 (1777); *Severtzoff Ann. Mag. N. H.* (4), xviii, p. 45; *Blanford Mammals*, p. 160; *Radde Zool. J.* B., iv, p. 1022.

Martes foina, Nilsson *Skand. Faun.*, i, p. 38 (1820)*; *Alston P. Z. S.*, 1877 p. 274, 1879, p. 469, and 1880, p. 53; *Gray Cat. Carn. Mamm.*, p. 86 *Scully P. Z. S.*, 1881, p. 202; id. *Ann. Mag. N. H.* (5), viii, p. 96.

Martes toufaeus, *apud Blyth J. A. S. B.*, xvi, p. 353 (1847) [pt.]; *Blyth Cat.* no. 194, p. 66.

Martes abietum, *apud Horsfield Cat. E. I. Mus.*, p. 101 (1851); *Adams P. Z. S.*, 1858, p. 517.

Martes leucolachnaea, *Blanford Yarkand Mammals*, p. 26 (1879).

? *Mustela intermedia*, *Severtzoff Ann. Mag. N. H.* (4), xviii, p. 45.

The Beach Marten.

Distribution.—Northern Europe (except England), Asia Minor (Alston), Turkestan (Severtzoff), Eastern Turkestan (Blanford), and Afghanistan. In the Himalayas from Gilgit eastwards as far as Sikkim or the country to the north of Sikkim.

a. Stuffed	Germany	W. T. Blanford, 1879.
b. Skeleton	Germany	W. T. Blanford, 1879.
c. Skin, skull	Yarkand	F. Stoliczka, 1874.

[Type of *M. leucolachnaea*, Blanford.]

d. Skin, skull	Gilgit, 5,000 ft.	G. M. Giles.
e. Skin	Leh, Kashmir	No history.
f. Skin	" "	H. H. Godwin-Austen.
g. Skin	Yarkand	J. Scully.
h-m. 5 Skins	Kabul ?	Purchased, 1872.
n. Stuffed, skull	Kabul ?	Purchased, 1872.
o. Stuffed	Thibet	G. T. Lushington, A.S.B.
p. Stuffed	Thibet	G. T. Lushington, A.S.B.
q. Stuffed	Thibet	G. T. Lushington, A.S.B.
r. Skull	Thibet	G. T. Lushington, A.S.B.
s. Skull	Afghanistan ?	Sir A. Burnes, A.S.B.
t. Skin, skull	♂ Gilgit, 5,000 ft., 8-10-80	J. Scully.
u. Skin, skull	Gilgit, 5,000 ft., 24-10-79	J. Scully.
v. Skin	Gilgit, 5,000 ft., 5-79	J. Scully.
w. Skin	Nagar, Gilgit, 2-79	J. Scully.

Mustela zibellina.

Mustela zibellina, *Linnaeus Syst. Nat.*, 12th ed., i, p. 68 (1766); *Radde Ost Siberien*, i, p. 29; *Schrenck Amurland Säugeth.*, p. 27.
Martes? toufcæus, *Hodgson F. A. S. B.*, xi, p. 281 (1842).
Martes zibellina, *Gray P. Z. S.*, p. 105 (1865); id. *Cat. Carn. Mamm.*, p. 83; *Blyth Cat.* no. 195, p. 66.

Distribution.—Northern Europe, Northern Asia, Saghalien Isle (Radde) Amurland, (Schrenck) and Thibet (I.M.)

a. Stuffed Thibet Purchased, 1855, A.S.B.

Mustela pennanti.

Mustela pennanti, *Erxleben Syst. Reg. Anim.*, p. 470 (1777); *Coues Fur-bearing Animals of North America*, p. 62.
Mustela canadensis, *Schreber Säugeth.*, iii, p. 492, pl. cxxxiv (1778).
Mustela melanorhyncha, *Boddaert Elench. Anim.*, p. 188 (1784)*.
Viverra piscator, *Shaw Gen. Zool.*, i, p. 414 (1800).
Mustela nigra, *Turton Syst. Nat.*, i, p. 60 (1806)*.
Mustela piscatoria, *Lesson Man. Mamm.*, p. 150 (1827).
Mustela godmani, *Fischer Syn. Mamm.*, p. 217 (1829).
Martes pennantii, *Gray P. Z. S.*, p. 107 (1865); id. *Cat. Carn. Mamm.*, p. 85.

The Pekan.

Distribution.—North America between 35° and 65° N. lat. in wooded parts of the country.

a. Skull Umbagog Lake, Maine, W. Theobald [P.], 1868.
 U.S.A. (A. F. Verrill,
 Col.)

Mustela americana.

Mustela martes, *apud Forster Phil. Trans.*, lxii, p. 372 (1772).
Mustela americana, *Turton Syst. Nat.*, i, p. 60 (1806)*; *Coues Fur-bearing Animals of North America*, p. 81.
Mustela leucopus, *Kuhl Beitr.*, p. 74 (1820).
Mustela vulpina, *Rafinesque Am. F. Sc.*, i, p. 82 (1819)*.
Mustela huro, *Schinz Syn. Mamm.*, i, p. 337 (1844).
Martes americana, *Gray P. Z. S.*, p. 106 (1865).
Mustela martinus, *Ames Bull. Minn. Acad.*, p. 69 (1874).

Distribution.—Northern parts of North America as far south as California in the west and Pennsylvania in the East.

a. Skull Upton, Maine, U.S.A. W. Theobald, 1868.
 (J. G. Rich.)

Genus PUTORIUS.

Putorius, *G. Cuvier Regne Anim.*, 1st ed., i, p. 147 (1817).
Foetorius, *Keyserling and Blasius Wirbelth. Europ.*, p. 21 (1840).
Vison, *Gray List Mamm. B. M.*, p. 64 (1843). *Type*, *P. lutreola*.
Gymnopus, *Gray P. Z. S.*, p. 118 (1865).

Key of the Indian Species.

a Limbs and lower surface darker than the upper parts; skull large and thick; the bulla connected with the hamular process of the pterygoids by a narrow bridge of bone.

b. Back fulvous, longer hairs black-tipped.

P. larvatus, p. 278.

*b*². Back dark-spotted and blotched with yellow.

P. sarmaticus, p. 278.

*a*². Limbs and lower surface not darker than the back.

c. Tip of tail dusky or black.

d. In winter pure white; in summer dark brown above; yellowish white below; bulla not very flat, rounded in front.

P. erminea, p. 278.

*d*². Lower parts brown. ***P. subhemachalanus***, p. 280.

*c*². Tip of tail not darker.

e. A pale yellow median dorsal stripe present; the yellow of the ventral surface not extending further than the breast.

P. strigidorsus, p. 282.

*e*². No dorsal stripe.

f. Nose white, above chestnut.

P. canigula, p. 280.

*f*². Nose the same colour as the forehead.

g. Back dark brown; below bright yellow; bulla pointed in front.

P. kathiah, p. 281.

*g*². Back very light brown, below a little paler.

P. alpinus, p. 281.

***Putorius foetidus*.**

Mustela putorius, *Linnaeus Syst. Nat.*, 12th ed., i, p. 67 (1766); *Blyth Cat.* no. 197, p. 67.

Mustela furo, id. *ibid.*, p. 68 (1766) [dom. var].

Putorius vulgaris, *Griffith Anim. King.*, v, p. 120 (1827).

Putorius foetidus, *Gray List Mamm. B. M.*, p. 64 (1843); *Gray Cat. Carn. Mamm.*, p. 87; *Coues Fur-bearing Animals of North America*, p. 154.

Fœtorius putorius, *Blasius Säugeth. Deutschl.*, p. 222 (1857).

The Pole Cat.

Distribution.—Middle and Northern Europe, Asia, Northern and Central regions?

<i>a</i> . Skin, skull	♂	.....	Purchased.
<i>b</i> . Skin, skull	♀	.....	Purchased.
<i>c</i> . Stuffed	Scotland		Sir W. Jardine, 1852, A.S.B.
<i>d</i> . Stuffed	"		Sir W. Jardine, 1852, A.S.B.
<i>e</i> . Skeleton	England		J. H. Gurney, 1860, A.S.B.

Var.—furio (=domesticated ferret).

a. Skin, skelet.	♀	.....	W. Rutledge.
b. Skin	♂	.....	W. Rutledge.
c. Skin, skelet.	♂	.....	W. Rutledge.
d. Skin, skull	♀	.....	W. Rutledge.
e. Skin, skelet.	♀	.....	W. Rutledge.
f. Stuffed, skull	Europe		Maharaja of Burdwan, 1858, A. S. B.
g. Alc.		.....	O. L. Fraser.

Putorius larvatus.

Putorius larvatus, *Hodgson J. A. S. B.*, xviii, p. 447, pl. xi (1849); *Blanford Mammals*, p. 163.

Putorius tibetanus, *Horsfield Cat. E. I. Mus.*, p. 105 (1851).

The Thibetan Pole Cat.

Distribution.—Thibet; the type was procured in the Utsany district north of Sikkim, another specimen in the British Museum was obtained from Ladak by General Strachey.

[No specimens in the Indian Museum.]

Putorius sarmaticus.

Mustela sarmatica, *Pallas Itin.*, i, p. 453 (1771)*; *Hutton J. A. S. B.*, xiv, p. 346; *Blyth Cat.* no. 198, p. 68; *Alston P. Z. S.*, 1880, p. 53; *Scully Ann. Mag. N. H.* (5), viii, p. 227.

Mustela peregusna, *Guldenstadt N. Comm. Petrop.*, xiv, p. 441 (1770).

Footorius sarmaticus, *Keyserling and Blasius Wirbelth. Europ.*, p. 68 (1840); *Blasius Säugeth. Deutschl.*, p. 226.

Putorius sarmaticus, *Griffith An. Kingd.*, v, p. 121 (1827); *Coues Fur-bearing Animals of North America*, p. 157; *Blanford Mammals*, p. 164; *Thomas Linn. Trans.* (2), v, p. 58; *Radde Zool. J. B.*, iv, p. 1023.

Distribution.—Eastern Europe, Poland and Russia, Western Asia from Asia Minor (Alston) to Kandahar (Hutton and Scully); also throughout the Transcaspiian region.

a-f. 6 Skins	Afghanistan	Purchased, 1872.
g. Stuffed	"	T. Hutton, 1845, A.S.B.
h. Skull	"	Sir A. Burnes, 1841, A.S.B.

Putorius erminea.

Mustela erminea, *Linnaeus Syst. Nat.*, 12th ed., i, p. 68 (1766); *Hodgson J. A. S. B.*, vi, p. 564; id. *ibid.* x, p. 909; id. *ibid.* xi, p. 280; *Gray Cat. Hodgs. Coll.*, 1st ed., p. 13; *Adams P. Z. S.*, 1858, p. 517; *Blyth Cat.*, no. 201, p. 68; *Radde Ost Sibiriens*, p. 52; *Schrenck Amurland Säugeth.*, p. 40; *Gray Cat. Carn. Mamm.*, p. 88; *Severtzoff Ann. Mag. N. H.* (4), xviii, p. 45; *Brauns Jena Zeit. Zool.*, xvii, p. 454; *Blanford Yarkand Mamm.*, p. 32.

Putorius erminea, *Griffith An. Kingd.*, v, p. 122 (1827); *Coues Fur-bearing Animals of North America*, p. 109; *Blanford Mammals*, p. 165.

- Mustela cicognani*, *Bonaparte Charlesw. Mag. N. H.*, ii, p. 37 (1833).
Mustela richardsoni, *Bonaparte*, id. *ibid.*, p. 38 (1838).
Foetorius erminea, *Keyserling and Blasius Wirbelth. Europ.*, p. 69 (1840);
Blasius Säugeth. Deutschl., p. 228.
Putorius noveboracensis, *Dekay New York Zool.*, p. 36, pl. xii (1842).
Mustela fusca, *Audubon and Bachman Journ. Acad. N. Sci. Philad.*, viii, pt. 2, p. 288 (1842).
Putorius agilis, *Audubon and Bachman Quad. N. Amer.*, iii, p. 184 (1853)*.
Putorius kaneii, *Baird North Amer. Mamm.*, p. 172 (1857)*.

The Ermine or Stoat.

Distribution.—Northern Palæarctic region and America as far as the southern border of the States; it extends to the Himalayas whence it was got by Dr. Henderson (see below) and is also recorded from Afghanistan by Griffith.

a. Skin (winter dress).	Hudson's Bay, 1883	J. H. Garnier. [Ex.]
b. Skin (summer dress).	Hyde Park, Ont., D. C.	J. H. Garnier [Ex.]
c. Skin	Europe	No history, A.S.B.
d. Skin	Europe	A.S.B.
e. Skin	Europe	A.S.B.
f. Skin	♂ Hungary	Hungarian Mus., A.S.B.
g. Stuffed	Europe	A.S.B.
h. Stuffed	Europe	A.S.B.
j. Stuffed	Dras, Kashmir	G. Henderson. †
k. Skull	.....	A.S.B.
l. Skull	.....	A.S.B.
m. Skull	Upton, Maine, U. S. A.	W. Theobald, 1868.

Putorius vulgaris.

- Mustela nivalis*, *Linnaeus Syst. Nat.*, 12th ed., i., p. 69 (1766); *Radde Ost Siberiens*, p. 53; *Schrenck Amurland*, i, p. 40; *Brauns Jena Zeit. Zool.*, xvii, p. 452.
Mustela vulgaris, *Erxleben Syst. Reg. An.*, p. 471 (1777); *Blyth Cat.* no. 204, p. 69.
Putorius vulgaris, *Griffith Animal Kingdom*, v, p. 121 (1827); *Coues Fur-bearing Animals of North America*, p. 102.
Mustela gale, *Pallas Zoog. Rosso As.*, i, p. 94 (1834).
Foetorius vulgaris, *Keyserling and Blasius Wirbelth. Europ.*, p. 69 (1840); *Blasius Säugeth. Deutschl.*, p. 231.
Mustela pusilla, *Dekay New York Zool.*, p. 34 (1842); *Blyth Cat.* no. 205, p. 69.
Putorius pusillus, *Audubon and Bachman Quad. N. Amer.*, ii, p. 100 (1851)*.

The Weasel.

Distribution.—North Europe and America (Northern States and Canada), Asia, Siberia, Amurland, and Yezzo.

a. Skin	Hungary	Hungarian Museum, 1863, A. S. B.
b-d. 3 skins	England	A. S. B.

† See Henderson Lahore to Yarkand, p. 42.

<i>e.</i> Stuffed	Europe	A. S. B.
<i>f.</i> Stuffed	England	A. D. Bartlett, 1842, A. S. B.
<i>g.</i> Stuffed	N. Carolina, U. S. A.	Rev. F. Fitzgerald, 1852, A. S. B.
<i>h.</i> Stuffed	N. Carolina, U. S. A.	Rev. F. Fitzgerald, 1852, A. S. B.
<i>j.</i> Skull?	Upton, Maine, U. S. A.	W. Theobald, 1868.

Putorius stoliczkanus.

Mustela stoliczkanus, *Blanford J. A. S. B.*, xlv, pt. 2, p. 260 (1877); *id.* *Yarkand Mammals*, p. 30, pls. ia, fig. 3, iib; *Radde Zool. J. B.*, iv, p. 1023.

Distribution.—Eastern Turkestan.

<i>a.</i> Skin	Yarkand	F. Stoliczka, 1873.
[Type of <i>M. stoliczkanus</i> , Blanford.]		

b. Skin, skull ♂ nr. Yarkand, 29-6-75. J. Scully.

Putorius subhemachalanus.

Mustela (Putorius) subhemachalana, *Hodgson J. A. S. B.*, vi, p. 563 (1837).

Mustela subhemachalana, *Hodgson J. A. S. B.*, xi, p. 280 (1842); *Gray Cat. Hodgs. Coll.*, 1st ed., p. 13; *Horsfield Cat. E. I. Mus.*, p. 103; *Adams P. Z. S.*, 1858, p. 517; *Blyth Cat. no. 202*, p. 68; *Ferdon Mamm.*, p. 83.

Mustela humeralis, *Blyth J. A. S. B.*, xi, p. 99 (1842).

Mustela horsfieldii, *Gray Ann. Mag. N. H.* (1), xi, p. 118 (1843).

Mustela hodgsoni, *apud Horsfield Cat. E. I. Mus.*, p. 103.

Vison subhemachalana and *V. horsfieldii*, *Gray Cat. Carn. Mamm.*, p. 95, (1869).

Putorius subhemachalanus, *Blanford Mammals*, p. 166 (1888).

Bhotea, Zimiong; Lepcha, Sang king.

Distribution.—The Himalayas of Nepal and Sikkim (Hodgson), possibly extending through the North-West Himalayas to Kashmir.

<i>a.</i> Skin	Landour, Mussoorie	L. C. Stewart, A. S. B.
<i>b.</i> Skin	Nepal (B. H. Hodgson)	E. I. Mus., London.
<i>c.</i> Stuffed	Darjeeling	J. T. Pearson, 1842, A. S. B.

[Type of *M. humeralis*, Blyth.]

Putorius canigula.

Mustela canigula, *Hodgson J. A. S. B.*, xi, p. 279 (1842); *Gray Cat. Hodgs. Coll.*, 1st ed., p. 13.

Mustela hodgsoni, *Gray Ann. Mag. N. H.*, xi, p. 118 (1843).

Putorius canigula, *Blanford Mamm.*, p. 167 (1888).

Distribution.—Thibet and the North-West Himalayas, probably extending to Kashmir.

<i>a.</i> Skin	♂ Bagee, nr. Simla	J. Biddulph, 1875.
<i>b.</i> Stuffed	.....	No history.

Putorius alpinus.

Mustela alpina, *Gebler Mem. Soc. Imp. Nat. Moscou*, vi, p. 213 (1824)*; *Radde Ost Siberiens* i, p. 48; *Severtzoff Ann. Mag. N. H.* (4), xviii. p. 45.

Mustela temon, *Hodgson F. A. S. B.*, xxvi, p. 207 (1857); *Blanford Yarkand Mamm.*, p. 32; *Scully P. Z. S.*, 1881, p. 203; *id. Ann. Mag. N. H.* (5), viii, p. 97.

Putorius alpinus, *Blanford Mammals*, p. 168 (1888).

Distribution.—Central Asia, the Altai mountains and Amurland, extending southwards to Thibet and the Himalayas, whence it has been recorded from Gilgit, the Kumaon and the Sikkim frontier.

Mr. Blanford remarks on the difference in size of the examples of this species and suggests that the larger individuals may be males, the smaller females, that this is the case is shewn by the following measurements of the individuals in the flesh taken from the tickets of Dr. Scully's specimens, the individuals were also sexed by Dr. Scully himself:—

	<i>a. ♂</i>	<i>b. ♂</i>	<i>c. ♀</i>
Total length . . .	17'0	17'4	15'0
Head and body . . .	10'0	9'8	8'7
Tail . . .	5'7	6'2	5'0
Hair at end of tail . . .	1'3	1'3	1'3
Height at shoulder . . .	3'25	3'6	—
„ „ rump . . .	3'90	4'0	—
Palm . . .	0'95	1'0	—
Sole . . .	0'7	0'75	—
Ear in front . . .	0'9	1'0	—
„ „ breadth . . .	1'1	1'1	'65

Weight 8'3 oz.

Weight 4'0 oz.

<i>a.</i> Skin, skull	♂	Bassin, Gilgit, 2-11-79	J. Scully.
<i>b.</i> Skin, skull	♂	Farfu, Bagrot, nr. Gilgit, 6-11-79	J. Scully.
<i>c.</i> Skin	♀	Gilgit, 26-6-79.	J. Scully.
<i>d.</i> Skin, skull		Chashi Yassin, nr. Gilgit, (J. Biddulph, 8-80, 9,500ft).	J. Scully.
<i>e.</i> Stuffed, skull	♀	Sanju Pass, Kuenlun Mts.	G. Henderson.

Putorius kathiah.

Mustela kathiah, *Hodgson F. A. S. B.*, iv, p. 702 (1835); *Gray Cat. Hodgs. Coll.*, 1st ed., p. 13; *Walker Calc. Journ. N. H.*, iii, p. 266; *Horsfield Cat. E. I. Mus.*, p. 102; *Blyth Cat.* no. 203, p. 69; *Ferdon Mamm.*, p. 84.

Mustela auriventer, *Hodgson F. A. S. B.*, x, p. 909 (1841); *id. ibid*, xi, p. 280.

Gymnopus kathiah, *Gray P. Z. S.*, p. 119 (1865); *id. Cat. Carn. Mamm.* p. 96.

Putorius cathia, *Blanford Mammals*, p. 169 (1888).

Nepal, Kathiah nyul; Assam, Darrup.

Distribution.—The Himalayas from Mussoorie to Sikkim, and the Khasia hills in Assam.

a. Skin	Assam	F. Jenkins, 1846, A.S.B.
b. Skin	Shillong, Assam	J. Cockburn [P.]
c. Alc., skull	Darjeeling	Zoological Gardens.
d. Alc., skull	Darjeeling, 5,000ft.	G. King, 1871.
e-f. 2 Skins	Shillong	T. la Touche, 1889.

Putorius strigidorsus.

Mustela strigidorsa, Gray P. Z. S., p. 191 (1853); *Horsfield Ann. Mag. N. H.* (2), xvi, p. 107; Gray *Cat. Hodgs. Coll.*, 2nd ed., p. 6; *Ferdon Mammals*, p. 85.

Gymnopus strigidorsus, Gray P. Z. S., p. 119 (1865); id. *Cat. Carn. Mamm.*, p. 97.

Putorius strigidorsus, *Blanford Mammals.*, p. 170 (1888).

Distribution.—Only known from the Sikkim Himalayas.

a. Skin, skull juv. ? Nepal (B. H. Hodgson)	India Mus., London.
b. { Skin in alc. }	G. B. Mainwaring.
{ Skull, part }	

Putorius sibericus.

Mustela siberica, *Pallas Spic. Zool.*, xiv., p. 86 (1780); *Blyth Cat.* no. 200, p. 68; *Radde Ost Siberiens*, i, p. 45; *Schrenck Amurland Säugeth.*, p. 37; *Swinhoe P. Z. S.*, 1870, p. 624.

Putorius sibericus, *Griffith An. Kingd.*, v, p. 122 (1827); *Coues Fur-bearing Animals of North America*, p. 171.

Mustela itatsi, *Temminck and Schlegel Faun. Japan Mamm.*, p. 34, pl. vii (1850).

Vison sibirica, Gray P. Z. S., p. 117 (1865).

Distribution.—Siberia generally, Amurland (Schrenck); Japan (Temminck) and China (Swinhoe).

a. Stuffed	Amoy, China	R. Swinhoe, 1859, A.S.B.
b. Skull	Amoy, China	R. Swinhoe, 1859, A.S.B.

Putorius vison.

Mustela lutreola, *Forster Phil. Trans.* lxii., p. 371 (1772); *Blyth Cat.* no. 199, p. 68.

Mustela canadensis, *Erzleben Syst. Reg. Anim.*, p. 455 (1777).

Mustela vison, *Schreber Säugeth.*, iii, p. 463, pl. cxxviib (1778).

Lutra vison, *Shaw Genl. Zool.*, i, p. 448 (1800).

Mustela winingus, *Barton Am. Phil. Trans.*, vi, p. 70. (1804).

Mustela minx, *Turton Syst. Nat.*, i, p. 58 (1806)*.

Mustela lutrecephala, *Harlan Faun. Amer.*, p. 63 (1825).

Putorius vison, *Gapper Zool. Journ.*, v, p. 202 (1830); *Coues Fur-bearing Animals of North America*, p. 160.

Vison lutreola, *Gray List Mamm. B. M.*, p. 64 (1843).

Putorius nigrescens, *Audubon and Bachman Quad. North Amer.*, iii, p. 104 (1853)*.

Vison lutreocephala, *Gray P. Z. S.*, p. 116 (1865); id. *Cat. Carn. Mamm.*, p. 93.

Putorius lutreolus, *Allen Bull. Mus. Comp. Zool.*, i, p. 175 (1869).

The Mink.

Distribution.—North America generally; from the Arctic Ocean to the southern part of the States.

a. Skin	♂	Ontario, Canada	J. H. Garnier [Ex.]
b. Skull		N. Carolina	Rev. F. Fitzgerald, A.S.B.
c. Skull		Upton, Maine, U. S. A.	W. Theobald, 1868.

Genus GULO.

Gulo, *Storr Prodr. Meth. Mamm.*, p. 34 (1780)*.

Gulo luscus.

Mustela gulo, *Linnaeus Syst. Nat.*, 12th ed., i, p. 67 (1766).

Ursus luscus, *Linnaeus Syst. Nat.*, 12th ed., i, p. 71 (1766).

Ursus gulo, *Schreber Säugeth.*, iii, p. 525, pl. cxliv (1778).

Gulo sibericus, *Pallas Spic. Zool.*, xiv, p. 25 (1780).

Meles luscus, *Boddaert Elench. Anim.*, i, p. 80 (1784)*.

Gulo borealis, *Nilsson Illum. fig. till Skand. Faun.* (1829)*; *Blasius Säugeth. Deutschl.*, p. 209; *Gray Cat. Carn. Mamm.*, p. 98.

Taxus gulo, *Tiedemann Zool.*, i, p. 377 (1808).

Gulo arcticus, *Desmarest Mamm.*, i, p. 174 (1820).

Gulo luscus, *Sabine Franklin's Journ.*, p. 650 (1823)*; *Blyth Cat.* no. 192, p. 65; *Coues Fur-bearing Animals of North America*, p. 34.

The Wolverine.

Distribution.—Circumpolar, i.e., the northern parts of both continents.

a. Stuffed	Siberia	British Mus. [Ex.]
b. Skull	Norway	University of Christiania, 1846, A.S.B.

Genus GALICTIS.

Galictis, *Bell Zool. Journ.*, ii, p. 552 (1826). *Type*, *G. vittata*.

Galera, } *Gray List Mamm. B. M.*, pp. 67, 68 (1843). { *Type*, *G. barbara*.
Grisonia, } { *Type*, *G. vittata*.

Galictis barbara.

Mustela barbara, *Linnaeus Syst. Nat.*, 12th ed., i, p. 67 (1766).

Gulo barbatus, *Desmarest Mamm.*, p. 175 (1820).

Viverra poliocephala, *Traill Mem. Wern. Soc.*, iii, p. 440 (1821).

Galictis barbara, *Wagner Schreber Säugeth. Suppl.*, ii, p. 214 (1841); *Alston Biol. Centr. Am. Mamm.*, p. 79.

Galera barbara, *Gray List Mamm. B. M.*, p. 67 (1843).

Galera barbata, *Gray P. Z. S.*, p. 121 (1865); *id. Cat. Carn. Mamm.*, p. 99.

Distribution.—From Mexico southwards to the Rio de la Plata.

a. Skin, skull ♀

.....

Zoological Gardens.

Galictis vittata.

Viverra vittata, *Schreber Säugeth.*, iii, p. 447, pl. cxxiv (1778).

Viverra cuja, *Shaw Genl. Zool.*, i, p. 433 (1800).

Viverra quiqui, *Shaw Genl. Zool.*, p. 432 (1800).

Gulo vittatus, *Desmarest Mamm.*, p. 175 (1820).

Galictis vittata, *Bell Trans. Zool. Soc.*, ii, p. 203, pls. xxxv, xxxvi (1837).

Galictis allamandi, *Bell Trans. Zool. Soc.*, ii, 204, pl. xxxvii (1837).

Grisonia vittata, *Gray P. Z. S.*, p. 122 (1865); *id. Cat. Carn. Mamm.*, p. 99.

Distribution.—South America.

a. Skin

♀

.....

W. Rutledge.

b. Skin

♂

.....

W. Rutledge.

Genus **ICTONYX**.

Ictonyx, *Kaup Thierreich*, i, p. 352 (1835)*.

Zorilla, *Lieblein Grundz. Uebers. Thierreichs* (1839)*.

Ictonyx zorilla.

Viverra zorilla, *Erxleben Syst. Reg. An.*, p. 492 (1777).

Viverra striata, *Shaw Genl. Zool.*, i, p. 387 (1800).

Mephitis zorilla, *Lichtenstein Darstell.*, pl. xlviii (1827-34).

Ictonyx capensis, *Kaup Thierreich*, i, p. 353 (1835)*.

Zorilla capensis, *Waterhouse Cat. Mamm. Mus. Zool. Soc.*, p. 33 (1838).

Zorilla striata, *Gray List Mamm. B. M.*, p. 67 (1843); *Blyth Cat. no.* 206, p. 69; *Gray Cat. Carn. Mamm.*, p. 140.

Rhabdogale mustelina, *Wagner Schreb. Säugeth. Suppl.*, ii, p. 219 (1841).

Distribution.—Africa, Senegal and the Cape.

a. Stuffed

South Africa

E. L. Layard, 1859, A. S. B.

b. Skeleton ♀

.....

Purchased.

Genus **HELICTIS**.

Helictis, *Gray P. Z. S.*, p. 94 (1831). *Type*, *H. moschata*.

Melogale, *Is. Geoff. St. Hil. Voy. aux Indes Orient. Belanger*, p. 129 (1834).

Type, *H. personata*.

The species of this genus seem to require revision; Anderson (*Anat. Zool. Res.*, p., 193) recognized four species, *H. nepalen-*

sis from Nepal, *H. orientalis* from Java and Sumatra, *H. subaurantiaca* from Formosa and the allied *H. moschata* (of which he considered *H. personata* of Geoffroy as a synonym) from China and Yunnan.

Thomas (P. Z. S., 1886, p. 62), states that *H. personata* of Geoffroy cannot be considered a synonym of *H. moschata*, as its teeth are of large size as is shown by Blainville's figure (*Osteographie*, II), and that it belongs to the large-toothed section of the genus; he also remarked that he could perceive no distinction between *H. orientalis* and *H. nepalensis* from Java and Nepal respectively.

Blanford (*Mammals*, p. 172) practically adopts Thomas' views on this subject, and distinguishes only two species from the Indian Empire, *H. orientalis* from Nepal, Sikkim and Java of a dark-brown, almost chocolate colour, with the upper sectorial tooth of moderate size, of which the outer lobe projects anteriorly and posteriorly beyond the inner lobe, and the anterior inner cusp considerably exceeds the posterior inner cusp in size; and *H. personata* with brownish gray fur and a trapezoidal upper sectorial with the two inner cusps almost equally developed.

The specimens in the Indian Museum cannot in any way be fitted to these two descriptions, as the following brief characters show:—

<i>Specimen.</i>	<i>Colour.</i>	<i>Sectorial.</i>
Skin, skull, juv. Darjeeling.	Reddish brown	Outer lobe not projecting, inner cusp subequal.
Skin, Arakan	Pale brown	...
Stuffed, skull, Arakan.	Pale brown	Very worn, but with outer lobe projecting and inner cusps very unequal.
Stuffed, Tippera	Pale brown	.....
Skeleton, Rangoon	.....	Outer lobe projecting slightly in front, more behind; inner lobes unequal.
Skin, skull, Shillong.	Blackish-gray, no reddish tinge; head almost black.	Outer lobe markedly projecting in front and behind; inner lobes very unequal.

From this it will be seen that the Darjeeling specimen, though of the colour of *H. orientalis*, has a skull resembling that of *H. personata*, while the Shillong specimen, with the colouring of *H. personata*, has a skull resembling that of *O. orientalis*. In the list below all the specimens have been identified as *H. personata*, except the Darjeeling one, as until more specimens are examined, it is impossible to correctly determine the limits of the species.

The following key is adopted from Blanford :—

Key of the Indian Species.

a. Forms with large teeth.

b. Colour brown or yellowish brown, not gray.

H. orientalis, p. 286.

b². Colour brownish gray.

H. personata, p. 286.

a². Forms with small teeth.

H. moschata, p. 286.

Helictis orientalis.

Gulo orientalis, *Horsfield Zool. Res.* with plate (1824).

Gulo nipalensis, *Hodgson* *J. A. S. B.*, v, p. 237 (1836); *id.* *J. A. S. B.*, vi, p. 560.

Helictis nipalensis, *Gray Cat. Hodgs. Coll.*, 1st ed., p. 14 (1846); *Horsfield Cat. E. I. Mus.*, p. 108; *Gray P. Z. S.*, 1853, p. 191; *Ferdon Mamm.*, p. 80.

Helictis orientalis, *Horsfield Cat. E. I. Mus.*, p. 106 (1851); *Blanford Mammals*, p. 173.

Oker, Nepal.

Distribution.—Nepal, Sikkim and Java.

a. Skin, skull juv. nr. Darjeeling, 9-65 J. Anderson.

Helictis personata.

Melogale personata, *Is. Geoff. St. Hil. Voy. aux Indes Orient.* *Belanger*, p. 137, pl. v (1834).

Mustela personata, *Blainville Osteog.*, ii, *Mustela*, p. 16; *Atlas*, ii, *Mustela*, pl. xiii (1839-64).

Helictis orientalis, *apud Blyth* *J. A. S. B.*, xxxi, p. 332 (1862).

Helictis nipalensis, *apud Blyth Cat.* no. 208, p. 70 (1863); *id.* *J. A. S. B.*, xlv, *Burma List*, p. 29.

Helictis personata, *Thomas P. Z. S.*, p. 59 (1886); *Blanford Mammals*, p. 174.

Distribution.—Assam, Manipur (Thomas); Tippera, Arakan and Lower Burma.

a. Skin	Arakan	Sir A. Phayre, 1843, A.S.B.
b. Stuffed, skull	Arakan	Sir A. Phayre, 1843, A.S.B.
c. Stuffed	Tippera dist., Beng.	F. Skipwith, 1845, A.S.B.
d. Skeleton	Rangoon, Burma	Sir A. Phayre, 1843, A.S.B.
e. Skin, skull	Shillong, Assam	T. laTouche.

Helictis moschata.

Helictis moschata, *Gray P. Z. S.*, p. 94 (1831); *Swinhoe P. Z. S.*, 1870, pp. 228 and 623; *Anderson Anat. Zool. Res.*, p. 193.

Distribution.—Yunnan (Anderson); China from Shanghai southwards and Hainan (Swinhoe); in Formosa replaced by *H. aurantiaca*.

- a. Skin Teng ye chew, Yunnan, J. Anderson.
7-58.
b. Skin Mormien, Yunnan, 4500ft., J. Anderson.
7-68.

Genus MELLIVORA.

Mellivora, *Storr Prodr. Method. Mamm.*, p. 34 (1780)*.
Ursitaxus, *Hodgson As. Res.*, xix, p. 60 (1836); *Type*, *M. indica*.

Mellivora indica.

Meles indicus, *Boddaert Elench. Anim.*, i, p. 80 (1785)*.
Ursus indicus, *Kerr Linn. Anim. Kingd.*, p. 188 (1792)*.
Meles indica, *Fischer Syn. Mamm.*, p. 151 (1829).
Ratelus mellivorus, *Bennet List An. Gard. Zool. Soc.*, p. 13 (1835)*.
Ursitaxus inauritus, *Hodgson As. Res.*, xix, p. 60 (1836); *id. f. A. S. B.*, v, p. 671.
Mellivora ratel, *Gray Cat. Hodgs. Coll.*, 1st ed., p. 13 (1846); *Horsfield Cat. E. I. Mus.*, p. 120; *Blyth Cat. no. 207*, p. 69.
Ratelus indicus, *Schinz Synop. Mamm.*, i, p. 329 (1844).
Mellivora indica, *Ferdon Mamm.*, p. 78; *McMaster Notes on Ferdon*, p. 15; *Gray Cat. Carn. Mamm.*, p. 122; *Murray Zool. Sind*, p. 32; *Sterndale Mamm. Ind.*, p. 134; *Thomas P. Z. S.*, 1886, p. 56; *Blanford Mammals*, p. 176.

The Indian Ratel; Biju or Bijru Bhal, Hind.; Biyu kharwar, Telegu; Tava karadi, Tamil; Gore pat, Sind; Bhassiar, Nepal.

Distribution.—India generally from the base of the Himalayas southwards, but does not seem to occur in Lower Bengal or on the Malabar Coast; is recorded from Sambar Lake (Thomas), Sind (Murray), the Deccan and Northern Circars (McMasters) and Goona, C. I. (I. M.)

The distinctness of the African and the Indian Ratels has never been satisfactorily settled; Blyth believed them to be the same when he wrote his catalogue, afterwards (*cf.* Jerdon's *Mammals*) he believed them to be different from one another, and distinguished the African form by the possession of a white stripe along the cheeks which does not occur in the Indian form. P. L. Sclater (*P. Z. S.*, 1870, p. 232) says that the animal which he described as *M. leuconota* could not when adult be distinguished from the Indian Ratel; and as there was no reasonable doubt that the type of *M. leuconota* came from Africa, he came to the conclusion that there was no specific distinction between the Indian and African Ratels.

Two fossil species (*M. sivalensis* and *punjabensis*) have been described from the Siwalik beds [*Pal. Ind.* (10), ii, p. 180.]

a. Skin	♀ nr. Paresnath, Beng., 1-2-68	E. V. Westmacott.
b. Skin	Goona, C. I.	A. Barclay.
c. Skin, skull	♀	W. Rutledge.
d. Skin	♀	Barrackpore Park, 1868.
e. Stuffed	.....	Maharajah of Burdwan, 1858 A.S.B.
f. Stuffed	.....	Maharajah of Burdwan, 1858, A.S.B.
g. Skeleton	♂ Coromandel Coast	Sir W. Elliot, 1847, A.S.B.
h. Skull	.. ..	B. H. Hodgson, 1836, A.S.B.
j. Skin	Agra dist., N.-W. P., 20-7-70	Agra Museum.

Genus MELES.

Meles, *Storr Prodr. Method. Mamm.* (1780)*.

There are apparently several species of Badger in Central Asia ; besides Hodgson's Tumphia (*Meles leucura*) there is Blyth's *Meles albogularis* (J. A. S. B., xxii, p. 590) ; Blanford's unnamed species from Kashgar, and Milne-Edward's *Meles leptorhynchus* (*Recherches Mammifères*, p. 190).

M. leucura is said to have a very distinct skull, the lower part of the hind-feet covered with hair, and it is also distinguished by its fur, which is longer, thicker and more flaccid than that of *M. taxus*.

M. albogularis is apparently distinguished by its white throat with a very narrow band of black only separating it from the white cheek.

M. leptorhynchus (*M. chinensis* of Gray) from China resembles the European badger externally and differs from it only in certain cranial characters.

Finally, the unnamed species from Kashgar differs from *M. taxus* only in that the median white mark in the middle of the face does not extend back further than the ears.

Meles taxus.

Ursus meles, *Linnaeus Syst. Nat.*, 12th ed., i, p. 70 (1766).

Meles taxus, *Boddaert Elench. Anim.*, i, p. 80 (1785)*; *Blyth Cat.* no. 210, p. 70; *Middendorf Siberische Reise*, ii, pt. 2, p. 3; *Blasius Säugeth. Deutschl.*, p. 204; *Radde Ost Sibériens*, i, p. 14; *Schrenck Amurland Säugeth.*, p. 17; *Gray Cat. Carn. Mamm.*, p. 124; *Severtzoff Ann. Mag. N. H.* (4), xviii, p. 45; *Alston P. Z. S.*, 1877, p. 274.

Taxus vulgaris, *Tiedemann Zool.*, i, p. 376 (1808).

Meles europaeus, *Desmarest N. Dict. Hist. Nat.*, iii, p. 465 (1816).

Meles vulgaris, *Desmarest Mamm.*, p. 173 (1820).

Meles canescens, *Blanford Persia*, p. 44, pl. iii (1876); *Alston P. Z. S.*, 1877, p. 274.

Distribution.—Europe, Northern Asia, Turkestan (Severtzoff), Persia (Blanford), and Asia Minor (Alston).

a. Skin, skelet.	♀	Spain ?	W. Rutledge.
b. Skin, skull	♂	.....	W. Rutledge.
c. Skin, skull	♂	.....	W. Rutledge.
d. Skin, skull		.....	W. Rutledge.
e. Skin, skelet.	♀	.....	W. Rutledge.
f. Stuffed		England	W. Davison, 1846, A.S.B.
g. Skeleton		England	J. H. Gurney, 1860, A.S.B.
h. Skeleton		France	Prof. Gervais.
i. Skull		England	A. D. Bartlett, A.S.B.
k. Skin, skull		Ispahan	Sir O. B. C. St. John.

[Type of *M. canescens*, Blanford.]

Meles leucura.

Taxidea leucura, Hodgson *J. A. S. B.*, xvi, p. 763, pls. xxix-xxxi (1847); *Blyth Cat.* no. 209, p. 70; *Gray Cat. Hodgs. Coll.*, 2nd ed., p. 7.
Meles leucurus, Gray *P. Z. S.*, p. 190 (1853); *id. Cat. Carn. Mamm.*, p. 126; *Horsfield Ann. Mag. N. H.* (2) xvi, p. 108.

Tibetan, Tumpha.

Distribution.—Thibet.

a. Skin	Thibet	A. Campbell, 1853, A.S.B.
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Meles sp.?

Meles sp., Blanford *Yarkand Mammals*, p. 25.

a. Skin	Kashgar	F. Stoliczka.
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Genus MYDAUS.

Mydaus, F. Cuvier *Hist. Nat. Mamm.* livr. xxvii (1821).

Mydaus meliceps.

Mydaus meliceps, F. Cuvier *Hist. Nat. Mamm.* livr. xxvii (1821); *Horsfield Cat. E. I. Mus.*, p. 109; *Gray Cat. Carn. Mamm.*, p. 131; *Forbes P. Z. S.*, 1879, p. 664.
Mephitis javanensis, Desmarest *Mamm.*, p. 187 (1820); *Raffles Linn. Trans.*, xiii, p. 251.

Distribution.—Java (Horsfield), Sumatra (Raffles), Borneo (I.M.)

a. Skeleton	Borneo	J. Anderson.
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Genus **ARCTONYX.**

Arctonyx, *F. Cuvier Hist. Nat. Mamm. livr. li* (1825).

Besides the two Indian species mentioned below, Milne Edwards (*Recherches Mamm.*, p. 195) has described two other species: *Arctonyx leucolæmus* from the neighbourhood of Pekin, and *A. obscurus* from Thibet.

Key of the Indian Species.

- a.* Skull about 6 in. in length; 4th upper premolar with two internal cusps and with the larger external cusp about equidistant from the anterior and posterior ends of the tooth, which is of a distinctly triangular shape. **A. collaris**, p. 290.
- a*². Skull about 4 in. in length; size about half that of *A. collaris*; 4th upper premolar with no internal cusps, the large external cusp being at the anterior end of the tooth, and the tooth itself approaching a quadrangular form. **A. taxoides**, p. 291.

Arctonyx collaris.

Arctonyx collaris, *F. Cuvier Hist. Nat. Mamm. livr. li* (1825); *Evans* *J. A. S. B.*, vii, p. 732; *id. ibid.*, viii, p. 408; *Horsfield Cat. E. I. Mus.*, p. 114; *Gray. Cat. Hodgs. Coll.*, 2nd ed., p. 7; *Walker Calc. Journ. N. H.*, iii, p. 265; *Blyth Cat. no. 212*, p. 71; *Ferdon Mamm.*, p. 77; *Gray Cat. Carn. Mamm.*, p. 122; *McMaster Notes on Ferdon*, p. 15; *Anderson Anat. Zool. Res.*, p. 196; *Blyth J. A. S. B.*, xlv, *Burma List*, p. 29; *Blanford Mammals*, p. 178.

Mydaus collaris, *Gray Illustr. Ind. Zool.*, i, pls. vi and vii (1830).

Mephitis assamensis, *McClelland Ind. Rev.*, ii p. 509 (1838).

Arctonyx isonyx, *Horsfield P. Z. S.*, p. 398, pl. 1 (1856).

The Hog Badger; Bhalu sur (= bear pig), Hind.; Hunteree bora, Assamese; Khway-htoo-wet-htoo, Arakan; Khwe-ta-wek-wek-ta-wek, Burmese.

Distribution.—Lower ranges and bases of the Himalayas, from Nepal to Assam, Sylhet, Arakan, both Upper and Lower Burma, not apparently found south of Tenasserim.

<i>a.</i> Skin	Momein, Yunnan,	J. Anderson.
	6,000ft. 7-68.	
<i>b.</i> Skin	Chittagong hills	J. T. Jarbo.
<i>c.</i> Skin	.....	Purchased.
<i>d.</i> Skin	juv. Darjeeling	Purchased.
<i>e.</i> Skin	Assam	J. Butler.
<i>f.</i> Skin	Chittagong	E. R. Shopland.
<i>g.</i> Stuffed	juv. Sylhet	C. Hufnagle, A.S.B.

n. Stuffed	.....	Captain Paterson, 1838, A.S.B.
j. Skull	juv.	No history, A.S.B.
k. Skull	juv.	No history, A.S.B.
l. Skull	♂	A.S.B.
m. Skeleton	♂	F. Skipwith, 1847, A.S.B.

Arctonyx taxoides.

Arctonyx taxoides, *Blyth J. A. S. B.*, xxii, p. 591 (1853); *Blyth Cat. no.* 213, p. 71; *Spearman Burma Gazette.*, p. 553; *Anderson Anat. Zool. Res.*, p. 196; *Blanford Mammals*, p. 180.

Distribution.—Probably the same as the last. Assam, Sylhet, Arakan and possibly China, if *Meles leucolæmus*, Milne Edw. is indistinguishable from this species as suggested by Blanford.

a. Stuffed, skull	Assam	J. McClelland, 1843, A.S.B. [Type of <i>A. taxoides</i> , Blyth].
b. Stuffed	juv. Arakan	Sir A. Phayre, 1848, A.S.B.

Genus MEPHITIS.

Mephitis, G. Cuvier *Tableau Gen. in Leçons d'Anat. Comp.*, 1st ed., i, (1800)*.

Mephitis mephitica.

Viverra putorius, *Linnaeus Syst. Nat.*, 12th ed., i, p. 64 (1766).

Viverra mephitis, *Schreber Säugeth.*, iii, p. 444, pl. cxxi (1778).

Viverra mephitica, *Shaw Mus. Leverianum*, p. 171 (1792)*.

Mephitis varians, *Gray Charlesw. Mag. N. H.*, i, p. 581 (1837); id. *Cat. Carn. Mamm.*, p. 136.

Mephitis mephitica, *Baird N. Amer. Mamm.*, p. 195 (1857)*; *Coues Fur-bearing Animals of North America*, p. 195.

Distribution.—North America, from Hudson's Bay and Great Slave Lake to Guatemala.

a. Skin	nr. Lake Scugog, Canada.	J. H. Garnier [Ex.].
b. Skelet.	.....	No history.
c. Skull	Upton, Maine, U. S. A., 29-9-68.	W. Theobald.
d. Alc.	♀	W. Rutledge.

Genus LUTRA.

Lutra, *Erxleben Syst. Regn. Anim.*, p. 445 (1777).

Aonyx, *Lesson Man. Mamm.*, p. 157 (1827). *Type*, *Lutra capensis*.

Lataxina, *Gray List Mamm. B. M.*, p. 70 (1843). *Type*, *Lutra canadensis*.

Barangia, *Gray P. Z. S.*, p. 123 (1865). *Type*, *L. sumatrana*.

Key of the Indian Species.

- a.* Claws well developed ; tail about $\frac{2}{3}$ of length of body.
- b.* Teeth moderate ; portion of frontals behind the postorbital processes decreasing regularly in width to constriction in front of brain case ; fur longish and loose ; upper border of naked nose-pad forming a salient angle.
L. vulgaris, p. 292.
- b*¹. Teeth large ; portion of frontals behind the postorbital process of equal width as far as the constriction in front of the brain case ; fur short and adpressed ; upper border of naked nose-pad straight.
L. ellioti, p. 294.
- b*³. Rich chestnut-brown above, golden red below and on the extremities (skull not known).
L. aurobrunnea, p. 295.
- a*². Claws in adults rudimentary ; tail not more than half the length of the head and body.
L. leptonyx, p. 295.

Lutra vulgaris.

- Mustela lutra*, *Linnaeus Syst. Nat.*, 12th ed., i, p. 66 (1766).
Lutra vulgaris, *Erxleben Syst. Reg. Anim.*, p. 448 (1777); *Temminck and Schlegel Faun. Jap. Mamm.*, p. 35; *Middendorf Siberische Reise*, ii, pt. ii, p. 70; *Schrenck Amurland Säugeth.*, p. 42; *Radde Ost Siberien*, i, p. 54; *Kelaart Prod. Faun. Zeylan.*, p. 35; *Blyth Cat.*, no. 216, p. 73; *Ferdon Mamm.*, p. 88 [pt.]; *Gray Cat. Carn. Mamm.*, p. 103; *Severtzoff Ann. Mag. N. H.* (4), xviii, p. 48; *Blanford Persia*, p. 43; *id. J. A. S. B.*, xlv, p. 324; *Alston P. Z. S.*, 1877, p. 275; *id. ibid.*, 1880, p. 54; *Lydekker J. A. S. B.*, xlix, p. 6; *Scully P. Z. S.*, 1881, p. 203; *Blanford Mammals*, p. 182; *Thomas P. Z. S.*, 1889, p. 195; *Radde Zool. J. B.*, iv, p. 1022.
- Lutra nair*, *F. Cuvier Dict. Sci., Nat.*, xxvii, p. 247 (1823); *Sykes, P. Z. S.*, 1831, p. 100; *Horsfield Cat. E. I. Mus.*, p. 115; *Blyth Cat.* no. 214, p. 72 [pt.]; *Ferdon Mamm.*, p. 86 [pt.]; *McMaster Notes on Ferdon*, p. 15 [pt.]; *Swinhoe P. Z. S.*, 1861, p. 390; *id. ibid.*, 1864, p. 381; *Anderson Anat. Zool. Res.*, p. 208, pl. xi; *Sterndale Mamm. Ind.*, p. 153.
- Viverra lutra*, *Pallas Zoog. Ross. As.*, i, p. 76 (1831).
Lutra roensis, *Ogilby P. Z. S.*, p. 111 (1834).
Lutra nudipes, *Melchior Säugeth. des Danisch. Staats* (1834)*.
Lutra chinensis, *Gray Charlesw. Mag. N. H.*, i, p. 580 (1837); *id. Cat. Carn. Mamm.*, p. 104; *Swinhoe P. Z. S.*, 1870, pp. 228, 624; *Anderson Anat. Zool. Res.*, p. 211.
Lutra indica, *Gray Charlesw. Mag. N. H.*, i, p. 580 (1837); *id. Cat. Carn. Mamm.*, p. 104.
Lutra monticolus, *Hodgson J. A. S. B.*, viii, p. 320 (1839).
Lutra monticola, *Blyth J. A. S. B.*, xi, p. 99 (1842); *id. ibid.*, xiv, p. 351; *Gray Cat. Hodgs. Coll.*, 1st ed., p. 14 [pt.].
Lutra kutab, *Schinz Syn. Mamm.*, i, p. 354 (1844).
Lutra ? *Blyth Cat.* no. 215, p. 73 (1863).

The Common Otter; Udbilao, Panikutta, Hind; Sag-i-ab, Punjab; Nirunci, Tam.; Niru-kuka, Telegu; Deeya balla, Cingalese.

Distribution.—The typical variety is found throughout the Palaearctic region from England to Japan, it extends to the Himalayas from Gilgit to the Brahmapootra, at elevations of from 4,000 ft. to 12,000 ft. The var. *nair* is found throughout Assam and the eastern half of the Indian peninsula from the foot of the Himalayas to Pondicherry, and also probably throughout the western half, but this is uncertain.

The var. *chinensis* is found throughout South China, extending as far as Yunnan and Upper Burma about Bhamo, and another variety unnamed is found in Ceylon.

a. Skin, skull	♂	Punyal, nr. Gilgit,	J. Scully.
		30-5-79.	
b. Skin		Daym, nr. Gilgit,	J. Scully.
		8-79.	
c. Skin	juv.	Gilgit, 5,000 ft.,	3-6-80 J. Scully.
d. Skin	♂	Gilgit, 16-6-79	J. Scully.
e. Skin, skull	♀	Gilgit, 10-2-80	J. Scully.
f. Skin		Gilgit	J. Biddulph.
g. Skin		Rungbee, Darjeeling	J. Munro.
h. Skull		Himalayas	A.S.B.
i. Skin, skull	juv. ♂	Assam?	Zoological Gardens.
k. Stuffed		Neuralia, Ceylon	E. F. Kelaart, A.S.B.
l. Stuffed		Neuralia, Ceylon	E. L. Layard, A.S.B.
m. Skin, skull		Ceylon	Colombo Mus.
n. Stuffed	♀	Calcutta, 4-4-70.	No history.
o. Stuffed		Calcutta.	W. H. Greenfield, 1848, A.S.B.
p. Skull	juv.	Calcutta	A.S.B., 1845.
q. Skeleton		.....	J. Armstrong.
r. Skin, skull	♀	Balligunge, Calcutta	Purchased.
s. Skin, skelet.	♀	Behala nr. Calcutta	Zoological Gardens.
t. Skin, skull	♂	Baraipore S. of Calcutta.	Purchased.
u. Skin, skull		Boitakkhana, Calcutta.	Purchased.
v. Skin	juv.	Bengal	No history.
w. Skin		Sibsagar, Assam, 14-6-70.	S. E. Peal.
x. Skull		Assam	Zoological Gardens.
y. Skin, skull		Deccan (Sykes)	India Mus., London.
z. Skin	juv.	Bhamo, Upper Burma, 2-68.	J. Anderson.
a ¹ . Skin		Bhamo, Upper Burma 2-68.	J. Anderson.
b ¹ . Skin		Momien, Yunnan, 6,000 ft., 6-68.	J. Anderson.
c ¹ . Skin		" "	J. Anderson.
d ¹ . Skin		" "	J. Anderson.
e ¹ . Skin		" "	J. Anderson.
f ¹ . Skin		" "	J. Anderson.
g ¹ . Skin		" "	J. Anderson.

<i>k</i> ² . Skin	Momein, Yunnan	J. Anderson.
	6,000 ft., 6-68.	
<i>j</i> ² . Skin	" " "	J. Anderson.
<i>k</i> ² . Skin	" " "	J. Anderson.
<i>l</i> ² . Skin	Momien, Yunnan,	J. Anderson.
	4,500 ft. 6 68.	
<i>m</i> ² . Stuffed	Malay Peninsula	No history.
<i>n</i> ² . Stuffed	England	W. Davison, 1844, A.S.B.
<i>o</i> ² . Skull	Derbyshire, England	D. Scott, A.S.B.
<i>p</i> ² . Stuffed	Europe	Christiania University, 1846, A.S.B.
<i>q</i> ² . Skull	♀ Europe	Hungarian Mus., 1863, A.S.B.
<i>r</i> ² . Skull	Europe	Christiania University, A.S.B.
<i>s</i> ² . Skull	Algeria	A. Malherbe, A.S.B.
<i>t</i> ² . Skin	juv.	Purchased, 1871.
<i>u</i> ² . Skull	.....	No history.
<i>v</i> ² . Skin, skull	.....	No history.
<i>w</i> ² . Skin, skull juv. ♂	.....	Zoological Gardens.
<i>x</i> ² . Alc. juv. ♀	Calcutta	O. L. Fraser.
<i>y</i> ² . Skin juv. ♀	.....	O. L. Fraser.
<i>z</i> ² . Skin, skull	.....	No history, 1869.
<i>a</i> ³ . Skin, skull	.....	No history.
<i>b</i> ³ . Skin	.....	No history.
<i>c</i> ³ . Skin, skull ♂	.....	Purchased.
<i>d</i> ³ . Skin	.....	No history.
<i>e</i> ³ . Skeleton juv.	.....	No history.
<i>f</i> ³ . Skeleton ♂	.....	Purchased, 1871.
<i>g</i> ³ . Skull	.....	No history.
<i>h</i> ³ . Skull	.....	A.S.B.
<i>j</i> ³ . Alc. juv. ♀	.....	Zoological Gardens.

Lutra ellioti.

- Lutra tarayensis*, Hodgson *J. A. S. B.*, viii, p. 319 (1839) [in part]; *Blyth J. A. S. B.*, xi, p. 99.
- Lutra nair*, *apud Elliot Madr. Journ.*, x, p. 100 (1839); *Cantor J. A. S. B.*, xv, p. 195; *Blyth Cat. no.* 214, p. 72 [in part]; *Ferdon Mamm.*, p. 86, [in part]; *Blyth J. A. S. B.*, xlv, *Burma List*, p. 28; *McMaster Notes on Ferdon*, p. 15 [in part]; *Murray Zool. Sind*, p. 31.
- Lutra monticola*, *apud Gray Cat. Hodgs. Coll.*, 1st ed., p. 14 [in part]; *Gray Cat. Carn. Mamm.*, p. 105; *Anderson Anat. Zool. Res.*, p. 209, pl. xii, figs. 1, 2, 3.
- Lutra ellioti*, *Anderson Anat. Zool. Res.*, pp. 211, 212 (1878); *Sterndale, Mamm. Ind.*, p. 155; *Blanford Mammals*, p. 185.
- Lutra simung*, *apud Anderson Anat. Zool. Res.*, p. 213 (1878).
- Lutra barang*, *apud Thomas P. Z. S.*, p. 195 (1889).

Distribution.—Throughout the Indian Peninsula, from the foot of the Himalayas to Travancore, and from the mouths of the Ganges to the river Indus in Sind; but not found in the hills in any part of its range, extending eastwards through Burma to the Malay Peninsula.

- a*. Skull ♂ Dehra Dun. L. C. Stewart, A.S.B.
b. Skull Jumna River, N.-W. P. J. Cockburn [P.]

c. Alc.	♂	Sind	Karachi Mus. [Ex.].
d. Skin	♂	Goona, C. I.	Zoological Gardens.
e. Skin, skull	♀	" "	A. Barclay.
f. Skeleton	♀	" "	A. Barclay.
	adult.		
g. Skeleton	♂	" "	A. Barclay.
h. Skull	♀	" "	A. Barclay.
i. Skull	♀	" "	A. Barclay.
k. Skull		" "	A. Barclay.
l. Skull	♂	" "	A. Barclay.
m. Skin, skull		South India	Sir W. Elliot, A.S.B.
		[Type of <i>L. ellioti</i> , Anderson.]	
n. Skull		South India	Sir W. Elliot, A.S.B.
o. Skin		Travancore	Purchased.
p. Skin		"	Purchased.
q. Skull		"	Rev. H. Baker, A.S.B.
r. Skull	♀	Purneah, Beng.	G. W. Shillingford.
s. Skin, skull,	♂	nr. Calcutta	E. Blyth, A.S.B., 1842.
skelet.			
t. Skull	♀	Alipore, Calcutta	Zoological Gardens.
u. Skeleton,	♂	Salt Water Lakes,	O. L. Fraser.
		Calcutta.	
v. Skin, skull	♂	Sunderbunds, Beng.	Zoological Gardens.
	juv.		
w. Skin, skele-	♂	" "	Zoological Gardens.
ton.			
x. Skin juv.	♂	Rajshahye dist., Beng.	Zoological Gardens.
y. Skull	♂	Bengal	A.S.B.
z. Skin, skull	♂	Assam	Zoological Gardens.
	juv.		
a ² . Skull	juv.	Arakan	Sir A. Phayre, 1845, A.S.B.
b ² . Skin		Momien, Yunnan,	J. Anderson.
		6,000 ft., 6-68.	
c ² . Alc.	♀	Amiah, Tavoy	Mus. Coll.
d ² . Stuffed juv.		.....	No history.
e ² . Skull	juv.	.....	A.S.B.

Lutra aurobrunnea.

Lutra aurobrunnea, Hodgson *J. A. S. B.*, viii, p. 320 (1839).

Lutra aurobrunnea, Gray *List Mamm. B. M.*, p. 71 (1843); id. *Cat. Hodgs. Coll.*, 1st ed., p. 14; Anderson *Anat. Zool. Res.*, p. 212.

Aonyx aurobrunnea, Gray *P. Z. S.*, p. 131 (1865); id. *Cat. Carn. Mamm.*, p. III.

♀ *Barangia nepalensis*, Gray *Cat. Carn. Mamm.*, p. 101 (1869).

Distribution.—Upper Hill Region of Nepal (Hodgson).

[No specimens in the Indian Museum].

Lutra leptonyx.

Lutra leptonyx, Horsfield *Zool. Res.* with plate (1824); Müller *Über de Zoogdieren in Tem. Verhandl.*, p. 51; Blyth *Cat.* no. 217, p. 73; Jerdon *Mamm.*, p. 89; McMaster *Notes on Jerdon*, p. 18; Sterndale *Mamm. Ind.*, p. 156; Blanford *Mammals.*, p. 187.

- Aonyx horsfieldii*, *Gray Charlesw. Mag. N. H.*, i, p. 580 (1837); *Swinhoe P. Z. S.*, 1870, p. 229; *Anderson Anat. Zool. Res.*, p. 213.
Lutra indigitatus, *Hodgson J. A. S. B.*, viii, p. 320 (1839).
Aonyx leptonyx, *Gray List Mamm. B. M.*, p. 71 (1843); *Cantor J. A. S. B.*, xv, p. 195; *Horsfield Cat. E. I. Mus.*, p. 117; *id Cat. Carn. Mamm.*, p. 110; *Swinhoe P. Z. S.*, 1870, p. 229; *Blyth J. A. S. B.*, xlv, *Burma List*, p. 28; *Fentink Notes Leyd. Mus.*, xi, p. 25.
Aonyx sikimensis, *Horsfield Ann. Mag. N. H.*, xvi, p. 109 (1855); *Gray Cat. Hodgs. Coll.*, 2nd ed., p. 7.
Aonyx indigitatus, *Gray Cat. Hodgs. Coll.*, 1st ed., p. 14 (1846); *Horsfield Cat. E. I. Mus.*, p. 119; *Gray Cat. Carn. Mamm.*, p. 110.
Lutra swinhoei, *Gray P. Z. S.*, p. 182 (1867); *id.*, *Cat. Carn. Mamm.*, p. 105; *Swinhoe P. Z. S.*, 1870, p. 625; *Anderson Anat. Zool. Res.*, p. 213.
Lutra aurobrunnea, *apud McMaster Notes on Jerdon*, p. 18 (1870).
Lutra (Aonyx) leptonyx, *Anderson Anat. Zool. Res.*, pp. 202, 213 (1878).
Lutra cinerea, *Thomas P. Z. S.*, p. 195 (1889).

The Clawless Otter; Chusam, Bhotea; Suriam, Lepcha.

Distribution.—Java, Sumatra, Borneo, Hainan, South China, Malay Peninsula, Burma, Yunnan, Assam, Himalayas up to 8,000ft. and as far west as Mussoorie, and throughout the eastern half of the Indian Peninsula from the Himalayas to Cape Comorin including the Nilgiris.

a. Stuffed	N. W. Himalayas	Purchased, 1851, A. S. B.
b. Skull	Mussoorie	L. C. Steuart, 1843, A.S.B.
c. Skin	Sikkim	L. Mandelli.
d. Stuffed, skull	Darjeeling	Mrs. Saxon 1844, A.S.B.
e. Skull	Cochin, South India	Rev. J. Baker.
f. Skull	" "	Rev. J. Baker.
g. Skin	Travancore, 9-70	Rev. J. Baker.
h. Skin	" "	Rev. J. Baker.
j. Skull	Calcutta	R. C. Beavan, A.S.B.
k. Skeleton ♂	Calcutta	Zoological Gardens.
l. Skin, skull ♀	24-Pergunnahs, Bengal	Zoological Gardens.
m. Skin, skull ♂	" "	Zoological Gardens.
n. Skin	Assam	A. W. Chennell.
o. Skin	Naga Hills, Assam	A. W. Chennell.
p. Stuffed	Arakan	Sir A. Phayre 1844, A.S.B.
q. Skin	Ponsee, Yunnan, 6,000ft., 7-68.	J. Anderson.
r. Skin	Momien, Yunnan, 4,500ft, 6-68.	J. Anderson.
s. Skin	" "	J. Anderson.
t. Stuffed	Malacca	R. W. G. Frith, 1847, A.S.B.
u. Stuffed juv.	Malacca	R. W. G. Frith, 1847, A.S.B.
v. Skin	.....	No history.
w. Skin	.....	No history.
x. Stuffed	.....	No history.
y. Skull	.....	A.S.B.
z. Skull	.....	A.S.B.

<i>a</i> ² . Skull	♂	.....	No history.
<i>b</i> ² . Alc.		.....	No history.
<i>c</i> ² . Alc.		.....	No history.

Lutra canadensis.

- Mustela (Lutra) canadensis*, *Kerr Linn. Anim. Kingd.*, i, p. 173 (1792)*.
Lutra brasiliensis, *Desmarest Mamm.*, i, p. 188. (1820) [in part].
Lutra lataxina, *F. Cuvier Dict. Sci. Nat.*, xxvii, p. 242 (1823).
Lutra canadensis, *Is. Geoff. St. Hil. Dict. Class. Hist. Nat.*, ix, p. 520 (1826);
Coates Fur-bearing Animals of North America, p. 295.
Lutra hudsonica, *F. Cuvier Suppl. Buffon*, i, p. 194 (1831)*.
Lataxina mollis, *Gray List Mamm. B. M.*, p. 70 (1843).
Lutra americana, *Wyman Pr. Bost. Soc. N. H.*, ii, p. 249 (1847).
Lutra californica, *Baird N. Amer. Mamm.*, p. 187 (1857)*.
Latax canadensis, *Gray P. Z. S.*, p. 133 (1865); *id. Cat. Carn. Mamm.*, p. 112.

Distribution.—The whole of North America.

- a*. Skull Umbagog Lake, Maine, U. S. A. W. Theobald.

Lutra brasiliensis.

- Lutra brasiliensis*, *Zimmerman Geogr. Geschichte*, ii, p. 316 (1780); *Thomas P. Z. S.*, 1889, p. 197.
Lutra lupina et paraguaensis, *Schinz Cuv. Thierr.*, i, p. 213 (1821).
Pteronura sandbachii, *Gray Charlesw. Mag. N. H.*, i, p. 580 (1837).

Distribution.—The Guianas and Brazil.

- d*. Skin Surinam Oxford Museum, 1870 [Ex.]

Genus ENHYDRA.

- Pusa*, *Oken Lehrb. Naturg.* (1816)*.
Enhydra, *Fleming Philos. Zool.*, ii, p. 187 (1822).

Enhydra lutris.

- Mustela lutris*, *Linnaeus Syst. Nat.*, 12th ed., i, p. 66 (1766).
Lutra marina, *Erxleben Syst. Regn. Anim.*, p. 445 (1777).
Pusa orientalis, *Oken Lehrb. Naturg.*, iii, p. 986 (1816)*.
Lutra lutris, *Lesson Man. Mamm.*, p. 155 (1827).
Lutra stelleri, *Lesson Man. Mamm.*, p. 156 (1827).
Enhydris stelleri, *Fischer Syn. Mamm.*, p. 229 (1829).
Phoca lutris, *Pallas Zoog. Ros. As.*, p. 100 (1831).
Enhydra lutris, *Dekay New York Zool.*, p. 41 (1842); *Coates Fur-bearing Animals of North America*, p. 326.
Latax marina, *Lesson Nouv. Tabl. Reg. Anim.*, p. 71 (1842).
Enhydris lutris, *Gray P. Z. S.*, p. 136 (1865); *id. Cat. Carn. Mamm.*, p. 119.

The Sea Otter.

Distribution.—Shores of North Pacific, north of 50°, extending on the American side as far as Lower California.

a. Skeleton	N. E. coast, Siberia	New York Mus.
b. Skeleton	.....	New York Mus.

Genus PROCYON.

Procyon, *Storr Prodr. Method. Mamm.*, p. 35 (1780)*.

Procyon lotor.

Ursus lotor, *Linnaeus Syst. Nat.*, 12th ed., i, p. 70 (1766).

Procyon lotor, *Storr Prodr. Method. Mamm.*, p. 35 (1780)*; *Blyth Cat. no.* 220, p. 74; *Gray Cat. Carn. Mamm.*, p. 242; *Allen Bull. U. S. Geol. Surv.*, ii, p. 325.

Meles lotor, *Boddaert Elench. Anim.*, i, p. 80 (1784)*.

Lotor vulgaris, *Tiedemann Zool.*, i, p. 380 (1808).

Procyon hernandezii, *Wagler Isis*, p. 514 (1831).

Procyon brachyurus, *Weigman Archiv f. Nat.*, iii, p. 369 (1837).

Procyon obscurus, *Weigman Archiv f. Nat.*, iii, p. 370 (1837).

Procyon nivea, *Gray Charlesw. Mag. N. H.*, i, p. 580 (1837).

Procyon psora, *Gray Ann. Mag. N. H.*, x, p. 261 (1842).

Procyon gularis, *H. Smith Jard. Nat. Libr.*, xiii, p. 222 (1842).

The Racoon.

Distribution.—North America from Alaska southward to Costa Rica in Central America.

a. Skin	juv.	Bruce Co., Ont., Canada	J. H. Garnier [Ex.].
b. Skin		Texas, U. S. A.	J. H. Garnier [Ex.].
c. Skin		Ontario	J. H. Garnier [Ex.].
d. Skin, skelet.	♂	.....	Purchased.
e. Skin, skelet.	♂	.....	W. Rutledge.
f. Skin, skelet.	♂	.....	Purchased.
g. Stuffed	♂	America	No history, 1872.
h. Skull		North America	A. D. Bartlett, 1849, A.S.B.
i. Skull		.....	Rev. F. Fitzgerald, 1853, A.S.B.

Genus NASUA.

Nasua, *Storr Prodr. Method. Mamm.*, p. 35 (1780)*.

Caoti, *Lacépède Mem. Inst. Paris*, iii, p. 492 (1801).

Nasua rufa.

Viverra nasua, *Linnaeus Syst. Nat.*, 12th ed., i, p. 64 (1766).

Viverra vulpecula, *Erxleben Syst. Reg. Anim.*, p. 490 (1777).

Viverra quasje, *Gmelin Syst. Nat.*, p. 37 (1788).

- Ursus nasua*, *G. Cuvier Tabl. Élément. d' Hist. Nat*, p. 113 (1798)*.
Nasua quasje, *Desmarest N. Dict. d' Hist. Nat.*, vii, p. 217 (1817).
Nasua rufa, *Desmarest Mamm.*, p. 170 (1820); *Allen Bull. U. S. Geol. Surv.*, v, p. 170.
Nasua fusca, *Desmarest Mamm.*, p. 170 (1820).
Nasua solitaria, *Pr. Maximilian zu Wied Beitr. Naturg. Bras.*, ii, p. 292 (1826)*.
Nasua socialis, *Pr. Maximilian zu Wied Beitr. Naturg. Bras.*, ii, p. 283, (1826)*.
Nasua vittata, *Tschudi Faun. Peruan.*, p. 101 (1844).
Nasua montana, id. *ibid*, p. 102, pl. v (1844).
Nasua narica, *Gray List Mamm. B. M.*, p. 74 (1843) [pt.].
Nasua olivacea, *Gray P. Z. S.*, p. 703 (1864).
Nasua dorsalis, *Gray P. Z. S.*, p. 169, pl. xvii (1866).

The Ring-tailed Coati.

Distribution.—South America from Surinam to Paraguay and from the Atlantic to the Andes.

a. Skin, skelet.	.....	W. Rutledge.
b. Skin, skelet. ♂	.....	Purchased.
juv. ♀		
c. Skin, skelet.	.....	Purchased.
d. Skin, skelet. ♂	.....	W. Rutledge.
e. Stuffed ^r	Brazil	Rajah R. Mullick, 1866.
f. Skull	Surinam	A. D. Bartlett, 1849, A.S.B.

Nasua nasica.

- Viverra narica*, *Linnaeus Syst. Nat.*, 12th ed., i, p. 64 (1766).
Nasua narica, *Gray List Mamm. B. M.*, p. 74 (1843) [pt.]; *Blyth Cat. no.* 221, p. 75; *Allen Bull. U. S. Geol. Survey*, v, p. 162.
Nasua leucorhynchus, *Tschudi Faun. Peruan.*, p. 100 (1844).
Nasua solitaria var. *mexicana*, *Weinland Zool. Gart.*, i, p. 191 (1860)*.
Nasua socialis, *De Saussure Zool. Gart.*, iii, p. 53 (1862)*.
Bassaricyon gabbii, *Allen P. Acad. N. Sci. Philad.*, p. 20 (1876).

The White-nosed Coati.

Distribution.—Central America, Texas and California southwards as far as the Isthmus of Panama.

a. Skin and ♀	.....	Purchased, 1878.
skelet.		
b. Stuffed ♂	America	W. Rutledge, 1870.

Genus CERCOLEPTES.

- Potos*, *G. Cuvier Tableau Gen. in Leçons, d'Anat. Comp.*, 1st ed. i. (1800)*.
Kinkajou, *Lacépède Mem. Inst. Paris*, iii, p. 492 (1801).
Cercoleptes, *Illiger Prodr.*, p. 127 (1811).

Cercoleptes caudivolvulus.

- Viverra caudivolvula*, *Schreber Säugeth.*, iii, p. 453, pl. cxxv (1773)
Lemur flavus *Schreber Säugeth.*, i, p. 145, pl. xlii (1778).

- Ursus caudivolvulus*, *G. Cuvier Tabl. Elément. d'Hist. Nat.*, p. 113 (1798)*.
Caudivolvulus flavus, *Tiedemann Zool.*, i, p. 381 (1808).
Cercoleptes caudivolvulus, *Illiger Prodr.*, p. 127 (1811); *Blyth Cat.* no. 218, p. 74; *Alston Biol. Centr.-Amer. Mamm.*, p. 76.
Potos caudivolvulus, *Desmarest Mamm.*, p. 171, pl. xlii (1820).
Cercoleptes megalotus, *Martin P. Z. S.*, p. 83 (1836).
Cercoleptes brachyotus, *Martin P. Z. S.*, p. 83 (1836).

The Kinkajou.

Distribution.—From Mexico southwards to the Rio Negro and Peru.

- | | | |
|-------------------|------------------|------------------------------|
| a. Stuffed, skull | Tropical America | Zoological Gardens, 1878. |
| | ♀ | |
| b. Skeleton | ..... | A. D. Bartlett, 1849, A.S.B. |

Genus AELURUS.

Ailurus, *F. Cuvier Hist. Nat. Mamm.*, livr. 1 (1825).

Aelurus fulgens.

- Ailurus fulgens*, *F. Cuvier Hist. Nat. Mamm.*, livr. 1 (1825); *Hardwicke Linn. Trans.*, xv, p. 161, pl. ii; *Gray Cat. Hodgs. Coll.*, 1st ed., p. 15; *Horsfield Cat. E. I. Mus.*, p. 126; *Blyth Cat.* no. 219, p. 74; *Ferdon Mamm.*, p. 74; *Gray Cat. Carn. Mamm.*, p. 247; *P. L. Sclater P. Z. S.*, 1869, p. 408, with figure; *Simpson P. Z. S.*, 1869, p. 507, pl. xli; *Sterndale Mamm. Ind.*, p. 128.
Aelurus ochraceus, *Hodgson F. A. S. B.*, xvi, p. 1118, pls. lii, liii (1847); id. *F. A. S. B.*, xvii, pt. 2, pp. 475, 573.
Aelurus fulgens, *Flower P. Z. S.*, p. 752 (1870); *Bartlett P. Z. S.*, 1870, p. 769; *Blanford Mammals*, p. 190.

The Cat-bear or Panda; Wah, Nepal; Wahdonka, Bhotea; Suknam, Lepcha.

Distribution.—Himalayas at 7,000 to 12,000 ft. from Nepal eastwards through Assam to Yunnan.

This peculiar animal is very distinct from all other carnivora and forms a distinct genus, and according to some views a distinct family; recently, Prof. Boyd Dawkins (*Quat. Journ. Geol. Soc.*, xlv, p. 230) has described a new species (*Ailurus anglicus*) from the New Crag of Norfolk and Suffolk which is of pliocene age, this is a very interesting discovery since it extends the range of the genus *Aelurus* considerably and offers fresh evidence in support of the view that the pliocene Mammalia of Europe are closely related to those of the Oriental Region now living.

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|---------|--|
| a. Skin | Momien, Yunnan, J. Anderson.
4,600 ft., 7-68. |
| b. | Momien, Yunnan, J. Anderson.
4,600 ft., 6-68. |

c. Skin	Momien, Yunnan,	J. Anderson.
	4,600 ft., 7-68.	
d. Skin	Momien, Yunnan,	J. Anderson.
	4,600 ft., 6-68.	
e. Skin	Sanda, Yunnan, 4,500	J. Anderson.
	ft., 7-68.	
f. Skin	Sikkim, 11-71	T. R. Doucett.
g. Skin	Sikkim	L. Mandelli.
h. Skin	Sikkim	L. Mandelli.
j. Skin	Sikkim?	Purchased.
k. Skin, skeleton	.....	Zoological Gardens.
l. Skin, skeleton ♀	.....	Zoological Gardens.
m. Skin	Sikkim?	Purchased.
n. Skin	Sikkim?	Purchased.
o. Skin	Sikkim?	Purchased.
p. Skin	Sikkim?	Purchased.
q. Stuffed	Darjeeling	B. Mainwaring.
r. Skeleton ♂	Himalayas	Zoological Gardens.
s. Skeleton ♂	.....	Zoological Gardens.
t. Skull ♀	.....	O. L. Fraser.
u. Skull	.....	No history.
v. Skin	Nepal	J. Scully.

Genus AILUROPUS.

Ailuropus, A. Milne Edwards *Arch. Mus. Paris*, vii, *Bulletin* p. 88 (1871).

Ailuropus melanoleucus.

Ursus melanoleucus, David *Arch. Mus. Paris*, v, *Bulletin* p. 13 (1869).

Ailuropoda melanoleucus, A. Milne Edwards *Ann. Sc. Nat.* (5), xiii, no. 10 (1870).

Ailuropus melanoleucus, A. Milne Edwards *Arch. Mus. Paris*, vii, *Bull.* p. 92 (1871); id. *Rech. Mamm.*, p. 321, pls. l-lvi.

Distribution.—Mountains of Eastern Thibet.

a. Skull (cast). Paris Museum [Ex.]

Genus URSUS.

Ursus, Linnæus *Syst. Nat.*, 12th ed., i, p. 69 (1766).

Helarctos, Horsfield *Zool. Journ.*, ii, p. 221 (1826). *Type*, *U. malayanus*.

Key of the Indian Species.

a. Upper molar equal in length to the two premolars immediately in front of it.

b. Forehead concave; fur generally whitish or grayish to brown; claws white or brown. **U. isabellinus**, p. 302.

b². Forehead flat; fur generally black with a broad white mark on the chest; claws black. **U. torquatus**, p. 303.

a². Upper molar equal in length to the one premolar immediately in front of it; skull with a very short nasal portion, the nose ferrugineous and the chest with a semi-lunar yellow patch.

U. malayanus, p. 304.

Ursus isabellinus.

Ursus isabellinus, *Horsfield Linn. Trans.*, xv p. 332 (1826); *Gray Cat. Hodgs. Coll.*, 1st ed., p. 15; *Wagner Hugel's Kaschmir*, iv, p. 570; *Adams P. Z. S.*, 1858, p. 517; *Blyth Cat.* no. 224, p. 76; *Ferdon Mamm.*, p. 69; *Gray Cat. Carn. Mamm.*, p. 223; *Atkinson N.W. P., Gazett.*, xi, p. 9; *Lydekker J. A. S. B.*, xlv, p. 285; *Scully P. Z. S.*, 1881, p. 203; *Kinloch Large Game-shooting*, i, p. 46.

? *Ursus syriacus*, *Hempr. & Ehr. Symb. Phys.*, pl. i (1828); *Gray Cat. Carn. Mamm.*, p. 224.

? *Ursus leuconyx*, *Severtzoff Ann. Mag. N. H.* (4), xviii, p. 43 (1876).

Ursus pruinus, *Blanford J. A. S. B.*, xlv, p. 318 (1877); *Blyth J. A. S. B.*, xxii, p. 589.

The Snow or Brown Bear also the Blue Bear (= var. *pruinus*; Lal Bhalu, or Barfkarich, Hind.; Harpat of Kashmir; Drinmor of Ladak.

Distribution.—The higher ranges of the Himalayas, both north and south of the watershed, from Gilgit, eastwards to Assam.

On comparing the skulls of *Ursus isabellinus* with those of the European and Northern Asiatic bear (*U. arctos*), the only apparent point of difference is that the forehead of the former species is distinctly concave, while that of the latter is flat, *i.e.*, the line between the postorbital processes and the nasal opening is in the case of *U. arctos* a straight one, and in the case of *U. isabellinus* a curved one, beyond this there does not seem to be any difference between the two species, and Blanford has in his *Mammals of India* combined the two under the name of *Ursus arctus*.

In the Eastern Thibetan variety (*U. pruinus*), the hair is blackish or bluish, but it is hardly worthy of separation even as a geographical race.

a. Skin	.....	G. T. Lushington, 1847, A.S.B.
b. Skin, skull	.....	Maharajah of Burdwan, 1858, A.S.B.
c. Skin, skull	.....	Maharajah of Burdwan, 1858, A.S.B.
d. Skin juv. ♀	.....	Zoological Gardens.
e. Skin, skelet. ♂	.....	Zoological Gardens.
f. Skin, skull ♂	.....	Zoological Gardens.
g. Stuffed, skull	.....	Zoological Gardens.
juv. ♂		
h. Stuffed juv. ♀	.....	Rajah R. Mullick.
j. Skull ♂	.....	A. Campbell, 1856, A.S.B.
k. Skull	♂ Kashmir	T. Brownlow, 1856, A.S.B.
l. Skull	Kashmir	Purchased, 1858, A.S.B.

m. Skeleton	♀	.....	King of Oudh, 1865.
n. Skull	♀	.....	Zoological Gardens.
o. Skull	♀	.....	Babu H. M. Roy.
p. Skin, skull	♂	Napin, nr. Gilgit, 29-10-79.	J. Scully.
q. Skin, skull	♀	Gakuch, nr. Gilgit, 22-10-79.	J. Scully.
r. Skull	♂	Sharot, nr. Gilgit	J. Scully.

Var.—pruinusos.

a. Skin	Thibet	A. Campbell, A.S.B.
b. Skin, skull pt.	Lhassa	W. T. Blanford.

[Type of *U. pruinusos*, Blanford.]

Ursus torquatus.

Ursus thibetanus, *F. Cuvier Hist. Nat. Mamm.* livr. xli (1824); *Blyth Cat.* no. 225, p. 76; *Ferdon Mamm.*, p. 70; *Radde Ost Siberien*, i, p. 12; *Swinhoe P. Z. S.*, 1870, pp. 230 and 621; *Atkinson N.-W. P. Gazett.*, xi, p. 10; *Lydekker J. A. S. B.*, xlv, p. 285; *Anderson Anat. Zool. Res. introd.*, p. xxi; *Murray Sind Zool.*, p. 39; *id. Ann. Mag. N. H.* (5), xiv, p. 98; *Kinloch Large Game-shooting*, i, p. 49.

Helarctos malayanus, *apud Hodgson J. A. S. B.*, i, p. 340 (1832).

Ursus torquatus, *Wagner Schreb. Säugeth. Suppl.*, ii, p. 144, pl. 141d (1841); *id. Hugel's Kaschmir*, iv, p. 570; *Gray Cat. Carn. Mamm.*, p. 225; *Blanford J. A. S. B.*, xlv, p. 320; *Sterndale Mamm. Ind.*, p. 113; *Blanford Mammals*, p. 197.

Ursus ferox *Robinson Assam*, p. 96 (1841).

Helarctos thibetanus, *Gray List Mamm. B. M.*, p. 73 (1843); *id. Cat. Hodgs. Coll.*, 1st ed., p. 15; *Horsfield Cat. E. I. Mus.*, p. 122; *Adams P. Z. S.*, 1858, p. 518.

Ursus formosianus, *Swinhoe P. Z. S.*, p. 380 (1864).

Ursus gedrosianus, *Blanford J. A. S. B.*, xlv, p. 317 (1877); *id. P. A. S. B.*, 1879, p. 4.

The Black Bear; Harpat in Kashmir; Mumh in Baluchistan; Bhalu Reench or Reech, Hind.; Thom, Bhotia; Sona, Lepcha.

Distribution.—From Baluchistan and the Khirthar hills in Sind (Blanford) to Kashmir (Hugel) and so along the entire range of the Himalayas to Assam, extending southwards through Burma as far as Mergui; and eastwards through China to Shantung and the Islands of Hainan and Formosa (Swinhoe) and South-Eastern Siberia.

a. Skin	♀	.....	Zoological Gardens.
b. Skin		Sanda Valley, Yunnan, 1,700 ft.	J. Anderson.
c. Skin		Assam, 27-6-72	S. E. Peal.
d. Skin, skull	♂	.....	L. C. Griesbach.
e. Stuffed		.....	No history.
f. Skeleton		.....	No history.
g. Skull		Assam	F. Jenkins, 1847, A.S.B.
h. Skull		.....	No history, A.S.B.
j. Skull		.....	H. H. Godwin Austen.

k. Skull		Mand Hills, Baluchistan	Karachi Mus. [Ex.]
l. Skull	♀	Mand Hills, Baluchistan	Karachi Mus. [Ex.]
m. Skull	♀	Mand Hills, Baluchistan	Karachi Mus. [Ex.]
n. Skull		Himalayas	Rajah R. Mullick.
o. Skeleton	♀	.....	Zoological Gardens.
p. Skull	♀	.....	Zoological Gardens.
q. Skull		.....	Zoological Gardens.
r. Skin, skull.		.....	No history.

Ursus malayanus.

Ursus malayanus, *Raffles Linn. Trans.*, xiii, p. 254 (1820); *Blyth Cat.* no. 226, p. 76; *Müller Over de Zoogdieren in Tem. Verhandl.*, p. 32; *Mc-Master Notes on Ferdon*, p. 10; *Blanford Mammals*, p. 199.

Prochilus malayanus, *Gray Ann. Phil.*, p. 61 (1825)*.

Helarctos malayanus, *Horsfield Zool. Journ.*, ii, p. 234 (1826); *id. Cat. E. I. Mus.*, p. 122; *Cantor F. A. S. B.*, xv, p. 191; *Gray Cat. Carn. Mamm.*, p. 234; *Blyth F. A. S. B.*, xliv, *Burma List*, p. 30.

Helarctos eurypilus, *Horsfield Zool. Journ.*, ii, p. 234 (1826).

The Malayan Bear; Wetwoon, Burmese; Bruang, Malay.

Distribution.—Garó Hills, Assam, Chittagong, Arakan, Tenasserim, Malay Peninsula (Cantor), Sumatra, Java and Borneo (Temminck).

a. Skin, skull	♀	Sibsagar, Assam	Zoological Gardens.
b. Skin, skull	♂	.....	Zoological Gardens.
c. Skin, skelet.		Assam	H. Phillips.
d. Skin, skelet.	♀	...	Rajah R. Mullick.
e. Skin, skull.	♀	.....	W. Rutledge.
f. Skin, skull	♂	Garó Hills, Assam	Zoological Gardens
g. Skin		.....	No history.
h. Skin		Java	Captain Scholefield, A.S.B.
j. Skin, skull		Arakan	Sir A. Phayre, 1845, A.S.B.
k. Stuffed, skull		Sumatra	W. Rutledge.
l. Stuffed, skull	juv. ♂	.....	H. W. Bennett, 1853, A.S.B.
m. Skull	♂	Malay peninsula	No history.
n. Skull	juv.	Arakan Hills	Zoological Gardens.
o. Skin, skull,		.....	W. Rutledge.
p. Skin	juv. ♀	.....	No history, 1885.

Ursus arctos.

Ursus arctos, *Linnaeus Syst. Nat.*, 12th ed., i, p. 69 (1766); *Blyth Cat.* no. 223, p. 75; *Radde Ost Siberien.*, i, p. 1; *Schrenck Amurland Säugeth.*, p. 8; *Alston P. Z. S.*, 1877, p. 275; *Gunther P. Z. S.*, 1880, p. 442.

Ursus pyrenaicus, *F. Cuvier Hist. Nat. Mamm.* livr. xlv (1824).

Ursus collaris, *F. Cuvier Hist. Nat. Mamm.* livr. xlii (1824).

Ursus ferox, *apud Temminck and Schlegel Faun. Mamm. Jap.*, p. 29 (1850).

Distribution.—Europe, Northern Asia, Asia Minor (Northern pt.), Amurland (Schrenck), Kurile Isles (Gunther) and Yesso.

a. Stuffed	♂	Europe	Purchased, 1869.
b. Skull	♂	Norway	Christiania Univ., 1846, A.S.B.
c. Skull	♀	Norway	Christiania Univ., 1846, A.S.B.
d. Skeleton	♀	.....	Babu H. M. Roy.
e. Skull		.....	H. F. Blanford, 1863, A.S.B.
f. Skull		Japan	Hakodate Mus. Yesso [E.]

Ursus japonicus.

Ursus tibetanus, *apud Temminck and Schlegel Faun. Jap. Mamm.*, p. 29 (1850).

Ursus japonicus, *Schlegel Handleid Beoefning Dierk.*, pt. 1 p. 42 (1857)*; *P. L. Sclater P. Z. S.*, 1862, p. 261, pl. xxxii; *Gunther P. Z. S.*, 1880, p. 442; *Gray Cat. Carn. Mamm.*, p. 227.

Distribution.—Japan.

a. Skin	♀	Japan	O. L. Fraser, Esq., 1886.
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Ursus americanus.

Ursus americanus, *Pallas Spic. Zool.*, xiv, p. 5 (1780); *Gray Cat. Carn. Mamm.*, p. 229.

Ursus niger americanus, *Schinz Synop. Mamm.*, i, p. 301 (1844).

Ursus cinnamomeus, *Baird Rep. U. S. Mex. Bound. Surv.*, ii, *Mamm.*, p. 29 (1859)*.

Distribution.—North America from Alaska southwards to Mexico.

a. Skull	.....	E. Blyth, 1865, A.S.B.
b. Skull	.....	W. Theobald, 1868.

Ursus maritimus.

Ursus maritimus, *Erxleben Syst. Reg. Anim.*, p. 160 (1777); *Blyth Cat.* no. 222, p. 75.

Ursus polaris, *Shaw Mus. Leverianum*, i, p. 7 (1792)*.

Ursus marinus, *Pallas Itin.*, iii, p. 691 (1793)*.

Thalarchos polaris, *Gray Ann. Philos.*, p. 62 (1825)*.

Thalarchos maritimus, *Gray List Mamm. B. M.*, p. 73 (1843).

Thalassarchos maritimus, *Gray Cat. Carn. Mamm.*, p. 218 (1869).

Distribution.—Circum-polar, Arctic coasts of Europe, Asia and America.

a. Skin, skelet.	♀	.....	W. Rutledge.
b. Skull		.....	E. Blyth, 1865, A.S.B.
c. Skull		Greenland	Copenhagen Mus., A.S.B.
d. Skull		Greenland	Aberdeen University.

Genus **MELURSUS.**

Melursus, *Meyer Uebers. neust. Zool. Entdeck.*, p. 155, (1793)*.

Prochilus, *Illiger Prodr.*, p. 109 (1811).

Melursus ursinus.

Bradypus ursinus, *Shaw and Nodder Natur. Miscell.*, ii, pl. lviii (1791); id. *Genl. Zool.*, i, pt. 1, p. 159.

Melursus lybius, *Meyer Uebers. neust. Zool. Entdeck.*, p. 155 (1793)*; *Gray Cat. Hodgs. Coll.*, 1st ed., p. 15.

Prochilus ursinus, *Illiger Prodr.*, p. 109 (1811).

Ursus labiatus, *Blainville Bull. Soc. Philom.*, p. 74 (1817)*; *Sykes P. Z. S.*, 1831, p. 100; *Elliot Madras Fourn.*, x, p. 100; *Tickell Calc. Fourn. N. H.*, i, p. 199, pl. vii; *Blyth Cat.* no. 227, p. 77; *Ferdon Mamm.*, p. 72; *McMaster Notes on Ferdon*, p. 12; *Stoliczka F. A. S. B.*, xli, p. 226; *Atkinson N.-W. P. Gazett.*, xi, p. 11; *Sterndale Mamm. Ind.*, p. 119.

Ursus longirostris, *Tiedemann Abhandl.*, p. 4 (1820)*.

Prochilus labiatus, *Gray Ann. Philos.*, p. 60 (1825)*; *Kelaart Prodr. Faun. Zeylan.*, p. 34.

Ursus inornatus, *Pucheran Rev. Mag. Zool.*, (2), vii, p. 392 (1855).

Melursus labiatus, *Gray Cat. Carn. Mamm.*, p. 237 (1869).

Melursus ursinus, *Blanford Mammals*, p. 201 (1888).

The Sloth Bear; Aswail, Mahrathi; Kaddi, Canarese; Rinch, Deccani; Oosa, Cingalese; Ballu Riksha, Sanskrit; Reech, Hindustani; Bhalu, Bhaluk, Bengali; Yerid, Gonds; Banna, Kols; Elugu, Telugu.

Distribution.—Over the whole Peninsula of India and Ceylon (Kelaart). It is apparently found in Cutch but not in Sind or in the Himalayas, eastwards it extends to Lower Bengal and apparently to Assam.

The Indian Bear is very distinct from the other bears, both in its distribution and its morphological characteristics. It is confined to the Peninsula of India strictly speaking, while the other Indian bears are all extra-peninsular; it is distinguished from the other Indian bears by its very elongated snout; by its very small cheek-teeth and by its concave and curved palate.

Of the two fossil bears found in India, one *Ursus theobaldi* from the Siwaliks [Pal. Ind. (20), ii, p. 211] is distinctly allied to *Melursus ursinus*.

a. Skin	.....	No history.
b. Skin	.....	No history.
c. Skin, skelet.	.....	W. Rutledge.
juv. ♀		
d. Stuffed, juv.	.....	W. Rutledge.
e. Skull ♂	Umsuing nr. Shillong, Assam.	J. Cockburn.
f. Skeleton	.....	No history, A.S.B.
g. Skull	.....	R. C. Beavan, 1864, A.S.B.
h. Skull	.....	Dr. McCosh, A.S.B.

<i>j-l.</i> 3 Skulls	.....	No history, A. S. B.
<i>m.</i> Skull	Ceylon	E. F. Kelaart, A.S.B.
<i>n-o.</i> 2 Skulls	.....	A.S.B.
<i>p.</i> Skeleton ♀	.....	Purchased.
<i>q.</i> Stuffed ♂	Chota Nagpore	V. Ball.
<i>r.</i> Skull juv.	.....	No history, A. S. B.
<i>s.</i> Skull juv.	.....	Maharajah of Burdwan, 1858, A.S.B.
<i>t.</i> Skull juv. ♂	.....	Purchased.
<i>u.</i> Skull	.....	V. Ball, 1869.
<i>v.</i> Skeleton	.....	No history, A.S.B.

Sub-order II—PINNIPEDIA.

Genus TRICHECHUS.

Trichechus, *Linnaeus Syst. Nat.*, 12th ed., i, p. 49 (1766).

Trichechus rosmarus.

Trichechus rosmarus, *Linnaeus Syst. Nat.*, 12th ed., i, p. 49 (1766); *Blyth Cat.* no. 232, p. 79.

Odobaeus rosmarus, *Sundevall Kongl. Vetens. Akad. Oefvers.*, p. 442 (1859).

Rosmarus trichechus, *Lamont Seasons with the Sea-horses*, p. 141 (1861)*.

Rosmarus obesus, *Gill Proc. Essex Inst.*, v, p. 13 (1866).

Rosmarus arcticus, *Lilljeborg Fauna öfvers Swer. och Norg. Ryg.*, p. 674 (1874)*.

The Walrus.

Distribution.—North Atlantic shores of North America from Labrador northwards, Greenland; Spitzbergen and Nova Zembla.

<i>a.</i> Skull	♂ Greenland	Copenhagen Mus. 1839, A.S.B.
<i>b.</i> Skull	♀	Copenhagen Mus. 1839, A.S.B.
<i>c.</i> Skull		No history.
<i>d.</i> Tusk	♀	No history, A.S.B.

Genus PHOCA.

Phoca, *Linnaeus Syst. Nat.*, 12th ed. i, p. 55 (1766).

Phoca vitulina.

Phoca vitulina, *Linnaeus Syst. Nat.*, 12th ed., i, p. 56 (1766).

Callocephalus vitulinus, *F. Cuvier Dict. Sci. Nat.*, xxxix, p. 544 (1826); *Blyth Cat.* no. 228, p. 77.

Phoca canina, *Pallas Zoog. Rosso Asiat.*, i, p. 114 (1831).

Halicyon richardii, *Gray P. Z. S.*, p. 28 (1864).

Phoca pealei, *Gill Proc. Essex Inst.*, v, p. 13 (1866).

Distribution.—The North Atlantic and Pacific coasts, from Japan to Southern California and from New Jersey round to Spain.

a. Skull ♂ Greenland Copenhagen Mus. 1839, A.S.B.

Phoca grœnlandica.

Phoca grœnlandica, *Fabricius in Müller's Zool. Dan. Prodr.*, p. viii (1776)*.

Phoca oceanica, *Lepechin Act. Acad. Petrop.*, i, pt. 1, p. 259 (1778).

Phoca albicauda, *Desmarest Mamm. Suppl.*, p. 541 (1822).

Callocephalus grœnlandicus, *F. Cuvier Mem. Mus. Paris*, xi, p. 186 (1824);
Blyth Cat. no. 230, p. 78.

Phoca legura, *G. Cuvier Oss. foss.*, 3rd ed., v, p. 238 (1825)*.

Phoca dorsata, *Pallas Zoogr. Rosso. As.*, i, p. 112 (1831).

Pagophilus grœnlandicus, *Gray Cat. Mamm. B. M.*, i, p. 25 (1850).

Distribution.—North Atlantic and Pacific, Newfoundland to Greenland, Iceland, Spitzbergen, Nova Zembla and the Arctic coast of Europe; also Northern Pacific, Kamschatka and Sitka.

a. Skull ♂ Greenland Copenhagen Mus., A.S.B.

b. Skull ♀ Greenland Copenhagen Mus., A.S.B.

Phoca barbata.

Phoca barbata, *Fabricius in Müller's Zool. Dan. Prodr.*, p. viii (1776)*;
Blyth Cat. no. 231, p. 78.

Phoca leporina, *Lepechin Act. Acad. Petrop.*, i, pt. i, p. 264 (1778).

Callocephalus barbatus, *F. Cuvier Mem. Mus. Paris*, xi, p. 189 (1824).

Phoca albigena, *Pallas Zoogr. Rosso. As.*, i, p. 109 (1831).

Phoca nautica, *Pallas Zoogr. Rosso. As.*, i, p. 108 (1831).

Erignathus barbatus, *Gill Proc. Essex Inst.*, v, p. 12 (1866).

Distribution.—Circum-polar but northerly in its range, southern limits, Labrador and Scandinavia on the Atlantic, Amur River and Sitka on the Pacific side.

a. Skull ♀ Greenland Copenhagen Mus., 1839,
A.S.B.

Genus *STENORHYNCHUS*.

Stenorhynchus, *F. Cuvier Mem. Mus. Paris*, xi, p. 190 (1824).

Stenorhynchus carcinophagus.

Phoca carcinophaga, *Hombron and Jacquinot in Dumont d'Urville, Voy. au Pôle Sud, Atlas, Mamm.*, pls. x. and x a (1842).

Stenorhynchus serridens, *Owen Ann. Mag. N. H.*, xii, p. 331 (1843).

Lobodon carcinophaga, *Gray Zool. Ereb. and Terr.*, p. 5 (1844).

Distribution.—Antarctic Seas.

a. Skull Antarctic Ocean Brit. Mus. [Ex.]

Genus CYSTOPHORA.

Cystophora, Nilsson *Skand. Fauna*, i, p. 382 (1820)*.

Cystophora cristata.

Phoca cristata, *Erxleben Syst. Reg. Anim.*, p. 590 (1777).

Cystophora borealis, Nilsson *Skand. Faun.*, p. 383 (1820)*.

Stennotopos cristatus, *F. Cuvier Mem. Mus. Paris*, xi, p. 196 (1824).

Phoca mitrata, *G. Cuvier Oss. foss.*, 3rd ed., v, p. 210 (1825)*.

Mirounga cristata, *Gray Griffith's An. Kingd.*, v, p. 179 (1827).

Cystophora cristata, Nilsson *K. Vetensk. Akad. Handl.* (1837)*; *Blyth Cat.* no. 233, p. 79.

Cystophora antillarum, *Gray P. Z. S.*, p. 93 (1849).

Distribution.—Northern parts of the Atlantic Ocean from Labrador to Norway.

a. Skull	♂	.....	Copenhagen Mus., 1839, A. S. B.
b. Skull	♀	.....	Copenhagen Mus., 1839, A. S. B.
c. Skull juv.	♂	.....	Copenhagen Mus., 1839, A. S. B.

Genus MACRORHINUS.

Macrorhinus, *F. Cuvier Mem. Mus. Paris*, xi, p. 200 (1824).

Macrorhinus leoninus.

Phoca leonina, *Linnaeus Syst. Nat.*, 12th ed. i, p. 55 (1766).

Phoca elephantina, *Molina Saggin sul Stor. Nat. del Chili*, p. 280 (1782)*.

Phoca proboscidea, *Peron Voy. aux Terr. Austr.*, ii, p. 34 (1817)*; *Blyth Cat.* no. 234, p. 79.

Phoca byroni, *Desmarest Mamm.*, p. 240 (1820).

Phoca ansoni, *Desmarest Mamm.*, p. 239 (1820) [in part].

Mirounga patagonica, *Gray Griffith's Anim. Kingd.*, v, p. 180 (1827).

Cystophora leonina, *falklandica*, *proboscidea*, et *kerguelensis*, *Peters Monatsber. Akad. Berlin*, p. 394 (1875).

Distribution.—Antarctic and Southern seas, *i. e.*, Kerguelen, Falkland, Patagonia, Juan Fernandez.

a. Upper canine	...	C. K. Hamilton, 1860, A.S.B.
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Order CETACEA.

Marine rarely fluviatile Mammals, with a thick, hairless skin and a flattened caudal fin; a certain number of the seven cervical vertebræ confluent; no sacrum; only very few of the ribs are provided with a capitulum or are connected with the sternum; no clavicles; the forelimbs are not provided with nails and form broad flattened paddles; the traces of the hind limb are scanty and entirely internal; the brain case is spheroidal, with broad basis cranii; the fused supraoccipitals and interparietals generally meet the frontals in front and separate the small laterally placed parietals from one another; a large supraorbital present; nasal bones very short, not covering the ventral nasal passages; rami of mandible with no ascending process; dentition homodont, monophyodont, teeth with single roots; pinna auris absent; stomach complex; salivary glands absent; kidneys lobulate; os penis not present; mammæ inguinal two in number; placenta diffuse.

Our knowledge of the Indian Cetacea is primarily due to Blyth, who wrote a paper in the Journal of the Asiatic Society, Vol. XXVIII, describing all the remains of Cetacea from Indian seas which he had been able to secure for the Museum of the Asiatic Society; secondly, to Anderson, who in his Anatomical and Zoological Researches, gives a complete account of the two fresh-water Dolphins of Indian Rivers, and of the skeleton of the fin-back whale found in the Indian Ocean; and, lastly, to Owen, who (Trans. Zool. Soc., Vol. VI) described the remains of a large number of Indian Cetacea collected by Sir W. Elliot on the Madras Coast.

The following synopsis is entirely based on the various writings of Prof. Flower, of which the chief are the papers in the Transactions of the Zoological Society, Vol. VI, in the Proceedings for 1883, and the articles Mammalia and Whales in the Encyclopædia Britannica.

Synopsis of Indian Genera.

- a. Teeth never functionally developed; upper jaws provided with plates of baleen; external respiratory aperture double; rami of mandible arched outwards, the anterior ends connected by fibrous tissue only; sternum a single piece connected with one pair of ribs only [=Mystacoceti]. **Balenoptera**, p. 313.
- a². Teeth present and functional; no baleen; external respiratory aperture single; rami of the mandible straight, the anterior ends forming a true symphysis; sternum of several pieces and connected with several pairs of ribs. [=Odontoceti.]
- b. Costal cartilages not ossified; hinder ribs loose the tubercular and retain the capitular articulation with the vertebræ;

cervical vertebræ ankylosed together ; no functional teeth in the upper jaw ; pectoral limbs small ; dorsal fin usually present.

- c. Teeth in lower jaw, 20 to 25 in number ; rostrum greatly elongated ; mandible long and narrow, the symphysis occupying more than half the length of the ramus.

Physeter, p. 314.

- c². Teeth in the lower jaw, 9 to 12 in number ; rostrum short, not exceeding the cranium in length ; mandibular symphysis less than half the length of the ramus.

Kogia, p. 315.

- b². Costal cartilages not ossified ; the tubercular and capitular articulation of the ribs blending posteriorly ; cervical vertebræ all free ; mandibular symphysis very long, exceeding half the length of the ramus ; dorsal fin rudimentary ; eye rudimentary ; fluviatile or estuarine. **Platanista**, p. 315.

- b³. Costal cartilages firmly ossified ; posterior ribs lose their capitular articulation and are united to the transverse processes of the vertebræ by the tubercular process ; some of the anterior cervical vertebræ generally ankylosed ; numerous teeth in both jaws ; symphysis of mandible short or moderate, not exceeding $\frac{1}{3}$ of the ramus ; dorsal fin usually present.

[= Delphinidæ.]

- d. With rounded head ; no distinct rostrum or beak ; in the skull the rostral equals the cranial portion in length ; atlas and axis firmly united ; pterygoids small and widely separated.

- e. Crowns of the teeth laterally compressed ; teeth $\frac{1\frac{3}{8}}{\frac{2}{2}0}$ to $\frac{2}{2}0$; no dorsal fin. **Neomeris**, p. 318.

- e². Crowns of the teeth conical and pointed.

- f. Pterygoid bones widely separated from one another ; teeth $\frac{1\frac{2}{2}}{\frac{1}{2}}\frac{2}{2}$ to $\frac{1\frac{4}{4}}{\frac{1}{4}}\frac{2}{2}$ small, occupying the whole length of the rostrum. **Orcella**, p. 318.

- f². Pterygoid bones normal, meeting in the middle line ; teeth $\frac{7}{8}$ to $\frac{8}{1\frac{1}{2}}\frac{2}{2}$ occupying only the anterior part of the rostrum ; dorsal fin low and triangular. **Globicephalus**, p. 319.

- f³. Pterygoid bones normal, meeting in the middle line ; teeth small $\frac{2\frac{3}{3}}{\frac{2}{2}}\frac{2}{2}$ to $\frac{3\frac{3}{3}}{\frac{3}{3}}\frac{2}{2}$, not exceeding 4 mm. in diameter ; rostrum slightly exceeding in length the cranium.

Lagenorhynchus, p. 21.

*d*². With distinctly elongated rostrum generally marked off from the antenaral adipose elevation by a V-shaped groove; the rostral considerably exceeds the cranial portion of the skull in length; atlas and axis united, other cervical vertebræ free.

g. Pterygoid bones normal, meeting in the middle line.

h. Palate with deep lateral grooves; symphysis of lower jaw short; teeth small not exceeding 3 mm. in diameter and $\frac{4}{4}^0$ to $\frac{6}{6}^0$ in number.

Delphinus, p. 321.

*h*³. Palate not grooved; symphysis of mandible short; teeth stout 6 to 7 mm. in antero-posterior diameter, $\frac{2}{2}^1$ to $\frac{2}{2}^5$ in number.

Tursiops, p. 323.

*h*³. Palate not grooved; symphysis of mandible short; teeth $\frac{3}{3}^0$ to $\frac{5}{5}^0$, small not exceeding 3 mm. in diameter. **Prodelphinus**, p. 324.

*h*⁴. Palate not grooved; symphysis of the mandible longer than $\frac{1}{4}$ th the length of the ramus; rostrum long and narrow; teeth $\frac{2}{2}^1$ to $\frac{2}{2}^5$, large 5 to 6 mm. in diameter.

Steno, p. 324.

*g*². Pterygoid bones narrow, separated in the middle line, their inner borders diverging posteriorly; teeth $\frac{3}{3}^0$ to $\frac{3}{3}^5$ in number, 4 to 5 mm. in diameter.

Sotalia. p. 325.

Genus BALAENA.

Balaena, *Linnaeus Syst. Nat.*, 12th ed., i, p. 105 (1766).

Balaena australis.

Balaena australis, *Desmoulins Dict. Class. H. N.*, ii, p. 161 (1822); *Blyth, J. A. S. B.*, xxviii, p. 488; id. *Cat.* no. 290, p. 94; *Flower P. Z. S.*, 1864, p. 390; id. *List Cetacea B. M.*, p. 1.

The Southern Right Whale.

Distribution.—Southern Seas.

<i>a</i> . Scapula	}	No history, A.S.B.
3 vertebræ			

Balaena mysticetus.

Balaena mysticetus, *Linnaeus Syst. Nat.*, 12th ed., i, p. 105 (1766); *Blyth Cat.* no. 289, p. 93; *Flower P. Z. S.*, 1864, p. 390; id. *List Cetacea B. M.*, p. 1.

The Greenland Right Whale.

Distribution.—Arctic Seas.

a. A flake of Baleen

.....

Dr. McGowan, 1860,
A.S.B.

Genus BALAENOPTERA.

Balaenoptera, *Lacépède Hist. Nat. Cétacés Tab. Ordres*, p. xxxvi (1804)*.

The Whales inhabiting the Northern Indian Ocean were first investigated by Blyth who described, from the remains catalogued below, *Balaenoptera indica*; Anderson (see below) believes that there are at least 3 species of Finback whales found in the Indian seas. *Balaenoptera indica*, the largest about 84 feet in length; a median-sized whale, whose existence is only indicated by certain vertebræ now in the Museum, attaining a length of about 60 feet for which he proposed the name *Balaenoptera blythi*; and a small species not exceeding 40 feet, which is founded on the nearly complete skeleton of the Sittang Whale (see below), for which the name *B. edeni* is proposed; these whales all seem to be closely allied to a species, *Balaenoptera schlegelii*, described by Prof. Flower (P. Z. S., 1864, p. 400) from Java and afterwards described and figured in great detail by Van Beneden and Gervais in the *Osteographie des Cétacés*; they do not seem to differ from one another at all except in size.

Balaenoptera indica.

Balaenoptera sp., *Blyth J. A. S. B.*, xxi, p. 358 (1852); *id. J. A. S. B.*, xxii, p. 414.

Balaenoptera indica, *Blyth J. A. S. B.*, xxviii, p. 488 (1859); *id. J. A. S. B.*, xxix, p. 451; *id. Cat. no. 288*, p. 93; *Ferdon Mamm.*, p. 161; *Anderson Anat. Zool. Res.*, p. 551; *Murray Zool. Sind*, p. 41.

Distribution.—The Bay of Bengal and the northern part of the Indian Ocean; this is probably also the whale recorded from the Arabian Sea and Persian Gulf.

a. Lower jaws, left
radius, 1st, 2nd,
9th, 11th lumbar,
3rd caudal verte-
brae and 1 rib. } Amherst Isle, Arakan T. P. Sparks, A.S.B.
Coast.

[Type of *Balaenoptera indica*, Blyth.]

b. Pt. of skull, atlas,
1 lumbar 2 cau-
dal, body of a
dorsal vertebra,
3 ribs, right } juv. Sondip Isle, Babu Uday Chand
shoulder girdle, nr. Chittagong, 11-74. Dutt.
hyoid and some
epiphyses.

Balaenoptera blythi.

Balaenoptera blythi, *Anderson Anat. Zool. Res.*, p. 564 (1878).

Distribution.—? Bay of Bengal.

a. 4 Vertebrae ? Bay of Bengal Medical College [Ex.], 1879.
 1 rib

[Type of *Balaenoptera blythi*, Anderson.]

Balaenoptera edeni.

Balaenoptera edeni, *Anderson Anat. Zool. Res.*, p. 551, pl. xlv (1878).

Distribution.—Only known from the Bay of Bengal.

a. Skeleton mtd., }
 ribs and one pec- }
 toral arch re- }
 stored in plaster. }
 } Thaybyoo Choung, Gulf Sir A. Eden and Major
 } of Martaban, Burma. Duff.

[Type of *B. edeni*, Anderson.]

b. Skeleton al- Sidhi Isle, Noakholly C. E. F. Tonnerre.
 most com- Dist., 1-90.

c. Skull Arakan Coast (Prof. Medical Coll. Mus. [Ex.]
 Walker).

Genus PHYSETER.

Physeter, *Linnaeus Syst. Nat.*, 12th ed., i, p. 107 (1766).

***Physeter macrocephalus*.**

Physeter macrocephalus, *Linnaeus Syst. Nat.*, 12th ed., i, p. 107 (1766);
Blyth F. A. S. B., xxix, p. 452; *Blyth Cat.* no. 287, p. 93; *Flower Trans.*
Zool. Soc., vi, p. 309, pls. lv, lvi; *Flower List Cetacea B. M.*, p. 8.

The Cachalot or Sperm Whale.

Distribution.—The temperate seas of the Northern and Southern Hemispheres; it has been recorded (*Blyth l.c.*) from the seas round Ceylon and the Malabar Coast; and a specimen about 24 feet long was washed ashore at Madras in January 1889, the skull of which has been preserved in the Madras Museum; the lower jaw contained 23 functional teeth and above imbedded in the gum were 12 rudimentary teeth on either side.

a-c. 3 Teeth	.....	No history, A.S.B.
d. Small tooth	.. ..	R. C. Tytler, 1864, A.S.B.
e-f. 2 Teeth	Australia	C. S. Guthrie, 1867.
g. Tooth	Mauritius	S. R. Elson.

Genus **KOGIA**.

Kogia, Gray Zool. Ereb. and Terr., p. 22 (1846).

Euphysetes, Wall Hist. and Descript. New Sperm Whale, Sydney (1851)*.

Kogia breviceps.

Physeter breviceps, Blainville Ann. Anat. Phys., ii, p. 337 (1838)*.

Kogia breviceps, Gray Zool. Ereb. and Terr., p. 22 (1846); Flower List Cetacea B. M., p. 9.

Euphysetes grayi, Wall Hist. and Descript. New Sperm Whale, Sydney (1851)*.

Euphysetes simus, Owen Trans. Zool. Soc., vi, p. 30, pls. x-xiv (1865).

Distribution.—The temperate and tropical seas of both hemispheres; was procured by Sir W. Elliot at Waltair near Madras.

[No specimens in the Indian Museum.]

Genus **PLATANISTA**.

Platanista, G. Cuvier Oss. Foss., 3rd ed., v, pt. i, p. 279 (1824)*

Platanista gangetica.

Delphinus gangeticus, Lebeck N. Schrift. Ges. naturf. Freunde, iii, p. 280 (1801)*; Roxburgh As. Res., vii, p. 170, pl. v; Home Phil. Trans., 1818, p. 417, pl. xx; Lesson Hist. Nat. Cétacés, p. 215.

Delphinus rostratus, Shaw Genl. Zool., ii, pt. 2, p. 514 (1801).

Delphinus shawensis, Blainville N. Dict. d'Hist. Nat., ix, p. 153 (1817).

Platanista gangetica, G. Cuvier Oss. foss., 3rd ed., v, pt. i, p. 279, pl. xxii, figs. 8 to 10, pl. xxiii, fig. 19 (1824)*; Gray Illustr. Ind. Zool., ii, pl. xxiv; Cuvier Hist. Nat. Cét., pl. viii, fig. 2*; Jardine Nat. Libr. Mamm., vi, p. 254, pl. xxviii; McClelland Calc. Journ. N. H., i, p. 425; Eschricht Naturvid. Kong. danske, videns. Selskab. (5), ii, p. 347*; Horsfield Cat. E. I. Mus. p. 139; Eschricht Ann. Mag. N. H., (2) ix, pp. 161, 279, pls. v, vi, viii; Blyth F. A. S. B., xxviii, p. 492; id. Cat. no. 286, p. 92; Jerdon Mamm. no. 144, p. 158; Flower Trans. Zool. Soc., vi, p. 87; Anderson Anat. Zool. Res., p. 417, pls. xxv, et ct.; Flower List Cetacea B. M., p. 12.

Platanista indi, Blyth F. A. S. B., xxviii, p. 493 (1859); id. Cat. no. 285, p. 92; Jerdon Mammals, no. 145, p. 159; Murray Zool. Sind, p. 40.

The Gangetic Dolphin; Susa, Sous, Sunsar in the Ganges; Bulhan in Sind; Hihoo, Sihoo, Huh in Assam.

Distribution.—The Ganges and its tributaries, including the Bramapootra and the Cachar Rivers and the Karnaphuli River of Chittagong; the Indus and its tributaries, all from their exit from the hills to their mouths.

a. Stuffed ♀

.....

A. Duvancel, A.S.B.

b. Stuffed ♀

.....

E. Blyth, 1843, A.S.B.

c. Stuffed juv. ♀	.....	E. Blyth, 1849, A.S.B.
d. Stuffed	Sutlej River	G. E. Wakefield, 1867.
e. Skeleton ♂	Hughli River, 19-7-66	J. Anderson.
f. Skeleton ♂	" " 12-8-66	J. Anderson.
g. Skeleton ♂	" " 16-8-66	J. Anderson.
h. Skeleton ♂	" " 23-8-66	J. Anderson.
i. Skeleton ♂	" " 12-2-67	J. Anderson.
k. Skeleton ♂	" " 13-2-67	J. Anderson.
l. Skeleton ♂ (skull in spirit).	" " 24-2-69	J. Anderson.
m. Skeleton	" " 29-10-76	J. Anderson.
n. Skeleton juv. ♂	" "	Coms. Police.
o. Skeleton juv. ♂	" "	J. Wood Mason.
p. Skeleton juv. ♂	" " 6-9-77	Purchased.
q. Skeleton juv. ♂	" " 4-4-79	Purchased.
r-i. 3 Skeletons ♂, ♂ juv. and ♀.	" "	Purchased.
u. Skeleton ♀	Bansi Creek, N.-W. of Dacca, 16-7-67.	A. L. Clay.
v. Skeleton	Gauhati, Assam, 4-12-69.	J. Butcher.
w. Skeleton juv. ♂	Cachar, 26-10-67	Sir J. Edgar.
x. Skeleton juv.	Indus River	Karachi Mus. [Ex.]
y-z. 2 Skeletons	.....	No history.
a ² . pt. of skeleton.	.....	No history.
b ² . Skeleton mtd.	Baraset, 5-8-67	H. Clark.
c ² . d ² . 2 Skulls	Hughli ?	N. Wallich, A.S.B.
e ² . Skull juv.	Dacca	A. L. Clay.
f ² . Skull	Chupra, Sarun Dist.	C. B. Garrett.
g ² . Skull	Indus	Sir A. Burnes, A.S.B.

[Type of *P. indi* of Blyth.]

h². Skull juv. No history.

Anatomical.

a³. Brain b³. Cæcum c³. Kidney. d³. Generative organs.
e³. Penis f³. Placenta and fœtal membranes. g³. Skeleton in spirit.

Genus **MONODON.**

Monodon, *Linnaeus Syst. Nat.*, 12th ed., i, p. 105 (1766).

Monodon monoceros.

Monodon monoceros, *Linnaeus Syst. Nat.*, 12th ed., i, p. 105 (1766); *Blyth Cat.* no. 276, p. 90; *Flower P. Z. S.*, 1883, p. 504; id. *List Cetacea B. M.*, p. 14.

The Narwhal.

Distribution.—Arctic Seas, north of 65° N. lat.

- a. Skelet. mtd. Lancaster Sound (Capt. Dundee Mus. [Ex.]
McLennan in Steam-
whaler Narwhal, 7-76).
- b. Tooth Capt. Lumsden, 1820,
A.S.B.

Genus DELPHINAPTERUS.

Delphinapterus, *Lacépède Hist. Nat. Cétacés Tabl. des Ord.*, p. xli (1804)*.
Beluga, *Gray Spiceleg. Zool.*, p. 2 (1828).

Delphinapterus leucas.

Delphinus leucas, *Pallas Reise*, iii, p. 85 (1776)*.
Balaena albicans, *O. F. Müller Zool. Dan. Prodr.*, p. 7 (1776)*.
Delphinapterus beluga, *Lacépède Hist. Nat. Cétacés*, p. 243 (1804)*.
Beluga catodon, *Gray Zool. Ereb. & Terr.*, p. 29 (1846); *Blyth Cat.* no. 275, p. 90.
Delphinapterus leucas, *Flower P. Z. S.*, p. 505 (1883); id. *List Cetacea B. M.*, p. 14.

The White Whale.

Distribution.—Arctic Seas and perhaps the Australian coasts (*Delphinus kingi* of Gray).

- a. Skull Greenland Copenhagen Mus., 1840, A.S.B.

Genus PHOCAENA.

Phocaena, *G. Cuvier Regne Anim.*, 1st ed., i, p. 279 (1817).

Phocaena communis.

Delphinus phocaena, *Linnaeus Syst. Nat.*, 12th ed., i, p. 108 (1766).
Phocaena communis, *Lesson Man. Mamm.*, p. 413 (1827); *Blyth Cat.* no. 271, p. 88; *Flower P. Z. S.*, 1883, p. 505; id. *List Cetacea B. M.*, p. 15.

Distribution.—Coasts of the North Atlantic, both European and American, the species found in the North Pacific is probably distinct.

- a-b. 2 Skulls Greenland Copenhagen Mus. [Ex.]
A.S.B.
- c. Skeleton Christiania Univ., A.S.B.

Genus **NEOMERIS.**

Neomeris, *Gray Zool. Erebus and Terr.*, p. 30 (1846).

Neomeris phocaenoides.

Delphinus phocaenoides, *G. Cuvier Reg. Anim.*, 2nd ed., i, p. 291 (1829)*.
Delphinus melas, *Temminck and Schlegel Faun. Jap. Mamm.*, p. 14, pls xxv, xxvi (1850).

Neomeris phocaenoides, *Gray Zool. Erebus and Terr.*, p. 30 (1846);
Blyth J. A. S. B., xxix, p. 449; id. *Cat. no. 272*, p. 89; *Flower P. Z. S.*, 1883, p. 506.

Delphinapterus molagan, *Owen Trans. Zool. Soc.*, vi, p. 24 (1869).

Distribution.—Is recorded from the seas of Japan, the Bay of Bengal and the Cape of Good Hope.

A second species from Karachi harbour which, however, does not seem to differ in any essential manner from the present species, has been described by Murray (*Ann. Mag. N. H.* (5), xiii, p. 348) under the name of *Neomeris kurrachiensis*, (see also *J. Bomb. N. H. Soc.*, i, p. 159, with plate).

a. Skeleton ♂ Bay of Bengal
 b. Stuffed

Calcutta Bazaar [P.] A.S.B.
 No history.

Genus **ORCELLA.**

Orcealla, *Gray Cat. Seals and Whales*, p. 285 (1866).

Orcella, *Anderson P. Z. S.*, p. 142 (1871).

Synopsis of the two Indian Species.

a. Dorsal fin lower and more falcate; pectoral fins shorter and broader. **O. brevirostris**, p. 318.

a². Dorsal fin higher and less falcate; pectoral fin longer and narrower; skin marked with streaks.

O. fluminalis, p. 319.

Orcella brevirostris.

Globiocephalus indicus, [pt.], *apud Blyth J. A. S. B.*, xxi, p. 358 (1852);
 id. *J. A. S. B.*, xxviii, p. 490; id. *Cat. no. 274*, p. 89; *Ferdon Mammals*, no. 146, p. 160.

Phocaena brevirostris, *Owen Trans. Zool. Soc.*, vi, p. 24, pl. ix, figs, 1, 2, 3 (1866).

Orca (*Orcaella*), *brevirostris*, *Gray Cat. Seals Whales B. M.*, p. 285 (1866).

Orcella brevirostris, *Anderson P. Z. S.*, p. 143 (1871); id. *Anat. Zool. Res.*, p. 369, pl. xxv, etct.; *Flower P. Z. S.*, 1883, p. 507; id. *List Cetacea, B. M.*, p. 17.

Distribution.—Estuaries of the rivers flowing into the Bay of Bengal, recorded from Vizagapatam, the Hughli and Singapore.

a. Stuffed, skull	Hughli R., Serampore	G. T. Lushington, A.S.B.
b. Skull	Chilka Lake, Orissa	L. Schwendler, 1875.
c. Skull	Chilka Lake, Orissa	W. C. Taylor.
d. Skull	Amherst beach, Burma	Deputy Commr., Amherst, 1867.
e. Skeleton	♂ Hughli River	River Police.
f. Skeleton	♀ Budge Budge, Hughli R.	Purchased.
g. Skeleton	♀ Circular Canal, Calcutta	J. F. Barckley.
h. Skeleton	Calcutta Bazaar	Purchased, 1859, A.S.B.
j. Skeleton	Kistna R., Madras Pr.	R. S. Ellis.
k. Skeleton	.....	Purchased, 1867.
l. Skeleton	♀	Purchased.

Orcella fluminalis.

Orcella fluminalis, *Anderson P. Z. S.*, p. 143 (1871); *id. Anat. Zool. Res.* p. 358, pl. xxva, etct; *Flower List Cetacea B. M.*, p. 17.

Distribution.—The Irrawaddy and its affluents, from Prome upwards extending to just beyond Bhamo.

a. Skeleton	♂ Bhamo	Capt. Bowers, 1870.
	[Type of <i>O. fluminalis</i> , Anderson.]	
b. Skeleton	♂ Bhamo	Capt. Cooke [P.]
c. Skeleton	Irrawaddy, above Bhamo.	Major Adamson.

Genus **GLOBICEPHALUS**.

Globicephalus Lesson Nouv. Tabl. Regn. Anim., p. 200 (1842).

Globicephalus melas.

Delphinus melas, *Traill Nichol. Journ.*, xxii, p. 81 (1809)*.

Delphinus globiceps, *Cuvier Ann. Mus. Paris*, xix, p. 14, pl. i (1812).

Globiocephalus svinéal, *Gray Zool. Ereb. and Terr.*, p. 32 (1846).

Globicephalus deductor, *apud Blyth Cat.* no. 273, p. 89 (1863).

Globicephalus melas, *Flower List Cetacea B. M.*, p. 19 (1885).

Distribution.—Apparently Cosmopolitan; there are specimens in the British Museum from the English and American coasts in the Northern Hemisphere, and from the Falkland Islands and New Zealand in the Southern Hemisphere.

a. Skull	Greenland	Copenhagen Museum, 1840, A.S.B.
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Globicephalus indicus.

Globicephalus sp., *Blyth J. A. S. B.*, xix, p. 426 (1850).

Globicephalus indicus, *Blyth J. A. S. B.*, xxi, p. 358 (1852); *id.*, *J. A. S. B.*, xxviii, p. 490; *id. Cat.*, no. 274, p. 89; *Ferdon Mammals* no. 146, p. 160.

Distribution.—Bay of Bengal.

The above synonymy also refers partly to what Blyth considered the young form of this species, but which was subsequently shown by Anderson to be really a different species (*Orcella brevirostris*, see supra).

The skull of *Globicephalus indicus* differs from that of *G. melas*, in having the premaxillæ on the rostrum so broadened, as to cover the maxillæ completely; the teeth are also much larger and less numerous than in *G. melas*.

This is exactly the difference pointed out by Prof. Flower between the skull of *G. melas* and *G. macrorhynchus* (Gray Zool. Ereb. Terr., p. 33) which was got from the Cape of Good Hope.

To this broad-snouted group of the genus *Globicephalus*, there also belong *G. scammoni* Cope from the Pacific, and *G. brachypterus* Cope from the Atlantic coasts of the Southern States and also *G. guadaloupensis* (= *G. intermedius*); True (Contributions to the Natural History of the Cetaceans in Bull. U. S. Nat. Mus. no. 36) considers that *G. scammoni* of the Pacific and *G. brachypterus* of the Atlantic differ specifically, and *G. indicus* seems to be rather more allied to the latter than to the former.

The following are the measurements of the two skulls of *G. indicus* and also of the one of *G. melas* above; the measurements are the same as those given by True in the paper quoted above and are given in centimetres.

	<i>G. indicus.</i>	<i>G. indicus.</i>	<i>G. melas.</i>
	<i>a</i>	<i>b</i>	<i>a</i>
Total length	56½	65	69
Length of beak	29½	33	36½
Breadth of beak, at its base	23	28	24½
" " at its middle	20½	25	21
Breadth of " premaxillæ at middle of beak	19	22	17
Greatest breadth between the outer margins of the premaxillæ proximally . . . . .	...	16½	16½
Length of tooth line	15½	14	18
Last tooth to base of maxillary notch	18	20	21
Extremity of beak to the anterior margin of the narial opening	41	44½	49
Extremity of beak to the end of the pterygoid crest	38	44	48
Breadth between the orbits	41	47	43
Breadth between the hinder margins of the temporal fossæ	27½	34	39
Length of the temporal fossæ	12½	11½	13
Depth of the temporal fossæ	14½	14½	10
Length of the mandible	47	56	53
Length of mandibular symphysis	8	9	8
Length of the mandibular tooth row	13	13½	17½
Number of teeth	7 × 7	7 × 7	10 × 10

- a. Skeleton mtd. ♀ Salt Water Lakes, E. Blyth, 1850, A.S.B.
Calcutta.
b. Skull ♂ Salt Water Lakes, E. Blyth, 1850, A.S.B.
Calcutta.

[Types of *Globicephalus indicus*, Blyth.]

- c. Skull No history.

Genus **LAGENORHYNCHUS.**

Lagenorhynchus, *Gray Zool. Ereb. & Terr.*, p. 34 (1846).

Lagenorhynchus acutus.

Delphinus acutus, *Gray Spiceleg. Zool.*, i, p. 2 (1828).

Delphinus eschrichtii, *Schlegel Abhan. Gebiet. Zool.*, i, p. 23, pls. i, ii, fig. 4, iv, fig. 5 (1841).

Delphinus leucopleurus, *Rasch Nyt Mag. Naturvidens.*, iv, p. 97, pls. ii, iii (1843).

Lagenorhynchus leucopleurus, *Gray Zool. Ereb. & Terr.*, p. 34 (1846); *Blyth Cat.* no. 281, p. 91.

Leucopleurus arcticus, *Gray Suppl. Cat. Seals and Whales*, p. 78 (1871).

Lagenorhynchus acutus, *Flower P. Z. S.*, p. 511 (1883); id. *List Cetacea B. M.*, p. 23.

Distribution.—North Atlantic and North Sea.

- a. Skeleton Norwegian Coast Christiania Univ. [Ex.],
A.S.B.

Lagenorhynchus electra.

Lagenorhynchus electra, *Gray Zool. Ereb. & Terr.*, p. 35 (1846); *Flower List Cetacea B. M.*, p. 23.

Phocaena pectoralis, *Peale Mamm. and Ornith. U. S. Explor. Exped.*, 1st ed., p. 32, pl. vi, fig. i (1848)*.

Electra obtusa, *Gray Suppl. Cat. Seals and Whales*, p. 76 (1871).

Delphinus (*Lagenorhynchus*) *fusiformis*, *Owen Trans. Zool. Soc.*, vi, p. 22, pl. v, fig. i (1866).

Distribution.—Bay of Bengal (Elliot) and Pacific (Sandwich Isles).

[No specimen in the Indian Museum.]

Genus **DELPHINUS.**

Delphinus, *Linnaeus Syst. Nat.*, 12th ed., i, p. 108 (1766).

Delphinus delphis.

Delphinus delphis, *Linnaeus Syst. Nat.*, 12th ed., i, p. 108 (1776); *Flower P. Z. S.*, 1883, p. 512; id. *List Cetacea B. M.*, p. 24.

Distribution.—Cosmopolitan; there are in the British Museum specimens from the North and South Atlantic, and from the seas of New Zealand and Tasmania.

a. Skeleton	.....	No history, A.S.B.
b. Lower jaw only.	Indian Ocean	Purchased.
c. Lower jaw only.	Nicobar Isles	F. A. de Roepstorff.

[The above two probably of this species.]

Delphinus frithi.

Delphinus sp., *Blyth J. A. S. B.*, xvi, p. 386 (1847).

Delphinus frithi, *Blyth J. A. S. B.*, xxviii, p. 492 (1859); id. *Cat.* no. 279, p. 91.

Distribution.—Probably the Indian Ocean.

This species, which is represented only by a skull, is closely allied to *Delphinus delphis*, it has the grooved palate characteristic of the genus as restricted by Flower; the teeth are not in good condition, many of them having fallen out; the number given by Blyth is $\frac{52-55}{50-50}$ but it does not appear that there could ever have been more than 45 teeth above and below from the present state of the skull; the character by which Blyth thought to differentiate this species, namely, the fusing of the premaxillæ together in the middle of their length is probably merely due to age and is shown to be also the case in the specimen of *D. delphis* figured by Van Beneden and Gervais; there seems therefore to be no reason why this skull should not be referred to *D. delphis*; as, however, there is no authentic specimen of *D. delphis* in the Indian Museum with which to compare it, it will perhaps be better for the present to let Blyth's name stand.

a. Skull	Indian or Atlantic Oceans.	R. W. G. Frith, A.S.B.
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[Type of *D. frithi*, Blyth.]

Delphinus pomeeгра.

Delphinus pomeeгра, *Owen Trans. Zool. Soc.*, vi, p. 23, pl. vi, fig. 3, pl. viii (1866); *Flower List Cetacea B. M.*, p. 26.

Distribution.—Bay of Bengal.

Probably conspecific with *D. delphis*.

[No specimen in the Indian Museum.]

Delphinus longirostris.

Delphinus longirostris, *G. Cuvier Regn. Anim.*, 2nd ed., p. 228 (1829)*

Van Beneden et Gervais Osteog. des Cetacés, p. 604, pl. xxxix, figs. 10-11.

Distribution.—Malabar Coast.

This species is distinguished from *Delphinus delphis* by the number of its teeth ⁶⁵⁻⁶⁶₅₇₋₅₈; the beak forms 67·9 per cent. of the total length of the skull, a proportion never reached in any specimen of *D. delphis* (cf. True Bull. U. S. Nat. Mus., no. 36, p. 59).

[No specimen in the Indian Museum.]

Genus **TURSIOPS.**

Tursiops, *Gervais Hist. Nat. Mamm.*, ii, p. 323 (1855)*.

Tursiops tursio.

Delphinus tursio, *Fabricius Faun. Grænl.*, p. 49 (1780)*.

Delphinus truncatus, *Montagu Mem. Wern. Soc.*, iii, p. 75, pl. iii (1821).

Delphinus eurynome, *Gray Zool. Ereb. and Terr.*, p. 33 (1846); *Blyth Cat.* no. 277, p. 90.

Tursiops tursio, *Flower P. Z. S.*, p. 512 (1883); id. *List Cetacea B. M.*, p. 26.

Distribution.—Atlantic and Indian Oceans extending to the Bay of Bengal.

There is a specimen identified by Prof. Flower with this species in the British Museum from the Seychelle Islands, so there is no reason that the two specimens catalogued below should not be identified with this species, though without direct comparison it is impossible to be certain.

a. Skull	.....	Medical College, Calcutta, A.S.B.
b. Skull	Bay of Bengal	Capt. Fairweather, A.S.B.
c. Skeleton	Port Natal	O. L. Fraser.

Tursiops perniger.

Delphinus perniger, *Blyth J. A. S. B.*, xvii, p. 250 (1848); id. *J. A. S. B.*, xxviii, p. 491; id. *Cat.* no. 280, p. 91; *Ferdon Mamm.*, p. 157.

Distribution.—The Bay of Bengal.

This species can never be properly identified as the type consists of a stuffed specimen and only about 8 inches of the beak of the skull; it is best assigned to *Tursiops*, from the typical specimens of which, however, it differs in the fact that the tooth row above is only about $7\frac{1}{2}$ inches long, whereas in *Tursiops tursio* the measurement is between 9 and 10 inches; the teeth are large between 5 and 6mm. in antero-posterior diameter.

a. Stuffed and pt. of skull.	Bay of Bengal	Sir W. Elliot, A.S.B.
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[Type of *Delphinus perniger*, Blyth.]

Genus **PRODELPHINUS.**

Clymene, *Gray P. Z. S.*, p. 237 (1864).

Clymenia, *Gray Suppl. Cat. Seals and Whales*, p. 69 (1871).

Prodelphinus, *Van Beneden et Gervais Osteogr. des Cétacés*, p. 604 (1880).

Prodelphinus obscurus.

Delphinus obscurus, *Gray Spiceleg. Zool.*, p. 2 (1828); *Blyth Cat.* no. 278, p. 90.

Clymenia obscura, *Flower P. Z. S.*, p. 512 (1883).

Prodelphinus obscurus, *Flower List Cetacea B. M.*, p. 28 (1885).

Distribution.—Southern seas; there are in the British Museum and in the Museum of the Royal College of Surgeons specimens from New Zealand, the Cape and the west coast of South America.

The skulls catalogued below certainly belong to the genus *Prodelphinus* as defined by Prof. Flower (*P. Z. S.*, 1883); they seem more nearly allied to *P. obscurus* than to any other species.

a. Skull	.....	No history, A.S.B.
b. Skull	Palk Straits, Ceylon	O. L. Fraser.

Prodelphinus attenuatus.

Steno attenuatus, *Gray Zool. Ereb. and Terr.*, p. 44, pl. xxviii (1846); *Blyth Cat.* no. 283, p. 92.

Clymenia attenuata, *Flower P. Z. S.*, p. 512 (1883).

Prodelphinus attenuatus, *Flower List Cetacea B. M.*, p. 30 (1885).

Distribution.—Indian Ocean, the Bay of Bengal to the Cape.

The specimens attributed to this species, bear a considerable resemblance to the specimens identified with the previous *P. obscurus*, but the rostra are considerably narrower and the teeth more numerous, being about $\frac{38-40}{38-40}$ instead of $\frac{30}{30}$.

a. Skull	.....	No history, A.S.B.
b. Skull	Bay of Bengal	Capt. Jethro Fairweather, 1859, A.S.B.
c. Skull	Cape of Good Hope	R. C. Tytler, 1859, A.S.B.
d. Lower jaw	.....	C. Henry, A.S.B.
e-f. 2 Skulls, no lower jaws.	.....	No history, A.S.B.

Genus **STENO.**

Steno, *Gray Zool. Ereb. and Terr.*, p. 43 (1846).

Steno rostratus.

Delphinus rostratus, *Desmarest N. Dict. d' Hist. Nat.*, ix, p. 160 (1817).

- Delphinus frontatus* (pt.), *G. Cuvier Oss. foss.*, 2nd ed., v., pt. 1, p. 278, pl. xxi, figs. 7, 8 (1823)*.
Steno frontatus, *Gray Zool. Ereb. and Terr.*, p. 43 (1846); *Blyth Cat.* no. 282, p. 91.
Steno rostratus, *Blyth J. A. S. B.*, xxviii, p. 491 (1859); *Flower P. Z. S.*, 1883, p. 513; id. *List Cetacea B. M.*, p. 31.

Distribution.—The Indian Ocean including the Red Sea and Bay of Bengal, the Southern Atlantic and Pacific Oceans.

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| a. Skull | Red Sea | J. Owen, 1844, A.S.B. |
| b. Skull | Nicobar Isles, Bay of Bengal. | H. Lewis, 1846, A.S.B. |
| c. Skull | "Calcutta Bazaar" | J. Armstrong. |

Genus SOTALIA.

Sotalia, *Gray Cat. Seals and Whales*, p. 393 (1866).

Sotalia gadamu.

- Delphinus* (*Steno*) *gadamu*, *Owen Trans. Zool. Soc.*, vi, p. 17, pl. iii, figs. 1-2, pl. iv, figs. 1-5 (1866).
Sotalia gadamu, *Flower P. Z. S.*, p. 513 (1883); id. *List Cetacea B. M.*, p. 33.

Distribution.—Indian Seas (Vizagapatam and Karachi).

The teeth of the specimen catalogued below are about 33 in number, while those of the type of *S. gadamu* are rather fewer, being only 27-28.

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|------------------------|-------|--------------------|
| a. Skull, no lower jaw | | No history, A.S.B. |
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Sotalia plumbea.

- Delphinus plumbeus*, *G. Cuvier Reg. Anim.*, 2nd ed., i, p. 283 (1829)*; *Jerdon Mamm.*, no. 143, p. 157; *Murray Zool. Sind*, p. 39.
Sotalia plumbea, *Flower List Cetacea B. M.*, p. 32 (1885).

Distribution.—Is recorded from the Malabar Coast and from Sind.

[No specimen in the Indian Museum.]

Sotalia lentigenosa.

- Delphinus* (*Steno* ?) *lentigenosus*, *Owen Trans. Zool. Soc.*, vi, p. 20, pl. v, figs. 2, 3 (1866); *Sterndale J. Bomb. N. H. Soc.*, ii, p. 51.
Sotalia lentigenosa, *Flower List Cetacea B. M.*, p. 33 (1885).

Distribution.—Bay of Bengal (Vizagapatam, Elliot).

[No specimen in the Indian Museum.]

Order SIRENIA.

Mammals of herbivorous and aquatic habits, with an almost hairless skin, a horizontal flattened caudal fin and an odontoid process; no sacrum; the capitulum of the rib articulates with the centrum of the vertebra; no claws; fore-limbs paddle-shaped with rudimentary nails; digits never provided with more than three phalanges; no trace of hind-limbs; brain-case cylindroidal; the parietals meet in a sagittal suture; the rami of the mandible have a high ascending portion (in these two points differing from Cetacea); frontals with large supra-orbital processes; nasals aborted; salivary glands well developed; a cæcum present; testes abdominal; mam-mæ pectoral.

Genus HALICORE.

Halicore, *Illiger Prodr.*, p. 140 (1811).

Halicore dugong.

Trichechus dugong, *Erxleben Syst. Reg. Anim.*, p. 599 (1777).

Halicore dugong, *Illiger Prodr.*, p. 140 (1811); *Gray Illustr. Ind. Zool.*, ii, pl. xxiii; *Horsfield Cat. E. I. Mus.*, p. 139; *Blyth Cat.* no. 461, p. 143; *Ferdon Mamm.*, no. 240, p. 311; *Blyth J. A. S. B.*, xlv, *Burma List*, p. 53; *Nevill Taprobanian*, i, p. 2.

Halicore indicus, *Desmarest Mamm.*, p. 509 (1822); *Cantor J. A. S. B.*, xv, p. 274; *Kelaart Prodr. Faun. Zeylan.*, p. 89; *Blyth J. A. S. B.*, xxviii, p. 494.

Halicore tabernaculi, *Rüppell and Sömmerring Mus. Senckenb.*, i, p. 99, pl. vi (1834).

Distribution.—The coasts of the Indian Ocean from Mozambique to the Red Sea, Malabar, Ceylon, Andamans and Tenasserim to Singapore.

The Australian species was separated by Owen, chiefly on account of the fact that it possessed 24 instead of 20 molar teeth, this does not seem to be a constant difference, as both species exceptionally develop 6 molars instead of 5.

There seem to be, however, other distinctions, some of which were noticed by Owen, these distinctions have been ignored by modern writers by whom all the Dugongs are included under one specific name. If an Australian skull be compared with an Andamanese one of approximately the same age, it will be found that the very large external nasal opening is in the Australian skull distinctly heart-shaped, the sides of the opening forming a continuous curve; in the Andamanese skull the opening is pear-shaped, the sides of the opening bulging forward anteriorly so as to constrict the opening; in the Australian skull too, the anterior projection of the frontal bones which, with the premaxillæ and the maxillæ

form the side wall of nasal opening, is very much more prominent and raised up than in the Andaman species.

As was pointed out by Owen, the scapula of the two forms also presents several points of distinction, the coracoid process is much more developed in the Australian species than in the Andaman form, the notch between the coracoid process and the anterior part of the blade is also strongly developed in the Australian, whereas in the Indian species there is hardly any notch at all; the curve of the posterior edge of the blade is very much greater in the Andaman than in the Australian example; the acromion too is much higher and bigger in the Andamanese form.

Curiously enough the skull entered in Blyth's Catalogue under the number 462B, and believed by him to be the skull of an Australian specimen, agrees in every way with the Andamanese species in the Museum, and has therefore been entered here under the name of *H. dugong*; it is very possible that there has been some mistake in the locality of the skull in question.

It seems to be generally acknowledged that the Red Sea form, (*H. tabernaculi* of Rüppell) is indistinguishable from the Indian species.

a. Skeleton	♂ Andamans	E. H. Man [P.]
b. Skeleton	.....	No history.
	(fœtus).	
c. Skull	Port Blair, Andamans	Col. Ford, 1867.
d. Skull	Nicobars	F. A. deRoepstorff.
e. Lower jaw	Nicobars, Andamans	F. A. deRoepstorff.
f. Lower jaw	Andamans	R. C. Tytler, A.S.B.
g. Skull	Gulf of Carpentaria?	Dr. R. Tytler, A.S.B.
h. Skull	.....	Purchased.

Halicore australis.

Halicore australis, Owen in *Fukes Voyage of H.M.S. Fly*, ii, p. 323 (1847).
Halicore dugong, var. *australis*, Collett *Zool. J. B.*, ii, p. 851 (1887).

Distribution.—Coasts of Australia.

a. Stuffed and skeleton	Queensland	Brisbane Mus. [Ex.]
	mtd.	
b. Skeleton	Queensland	Purchased.

Order EDENTATA

The Order Edentata is a very polymorphic one and not easily defined; the forms included in it have, however, the following points of structure in common; teeth present or absent, when present, consisting of molars only, and springing from persistent pulps devoid of enamel.

The only genus represented in the Indian Empire is *Manis*, which is characterised by being covered externally by large imbricated horny scales ; no teeth ; tongue long, vermiform and protractile ; limbs short, with five complete digits to each foot ; a diffused and non-deciduate placenta.

Genus **CHOLOPUS**.

Choloepus, *Illiger Prodr.*, p. 108 (1811).

Cholopus didactylus.

Bradypus didactylus, *Linnaeus Syst. Nat.*, 12th ed., i, p. 51 (1766).

Choloepus didactylus, *Illiger Prodr.*, p. 108 (1811) ; *Gray Cat. Carn. Mamm.*, p. 363.

Distribution.—Brazil and Guiana.

a. Skin, skull ♂ and bones.	Zoological Gardens.
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Cholopus hoffmanni.

Choloepus hoffmanni, *Peters Monatsber. Akad. Berlin*, p. 128 (1858) ; *Gray Cat. Carn. Mamm.*, p. 363 ; *P. L. Sclater P. Z. S.*, 1872, p. 861, pl. lxxii ; *Alston Biol. Centr.-Amer. Mamm.*, p. 186.

Distribution.—Central and South America from Costa Rica to Ecuador.

a. Skeleton mtd.	Purchased.
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Genus **MYRMECOPHAGA**.

Myrmecophaga, *Linnaeus Syst. Nat.*, 12th ed. i, p. 51 (1766).

Myrmecophaga jubata.

Myrmecophaga jubata, *Linnaeus Syst. Nat.*, 12th ed. i, p. 52 (1766) ; *Blyth Cat.*, p. 178 ; *Alston Biol. Centr. Amer.-Mamm.*, p. 191.

Distribution.—America from Guatemala to Paraguay.

a. Stuffed	A. D. Bartlett, A.S.B.
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Genus **TATUSIA**.

Tatusia, *Lesson Man. Mamm.*, p. 309 (1827).

Tatusia novemcincta.

- Dasypus novemcinctus*, *Linnaeus Syst. Nat.*, 12th ed., i, p. 54 (1766).
Dasypus peba, *Desmarest Mamm.*, p. 368 (1822).
Dasypus fenestratus, *Peters Monatsber. Akad. Berlin*, p. 180 (1864).
Tatusia peba, *Gray Cat. Carn. Mamm.*, p. 377 (1869).
Tatusia novemcincta, *Alston Biol. Centr.-Amer. Mamm.*, p. 188, pl. xx (1882).

Distribution.—America from Texas southwards to Paraguay.

a. Alc. British Mus. [Ex.].

Genus DASYPUS.

- Dasypus*, *Linnaeus Syst. Nat.*, 12th ed., i, p. 53 (1766).
Euphractus, *Wagler Nat. Syst. Amphib.*, p. 36 (1830).

Dasypus sexcinctus.

- Dasypus sexcinctus*, *Linnaeus Syst. Nat.*, 12th ed., i, p. 54 (1766); *Gray Cat. Carn. Mamm.*, p. 381.
Dasypus encoubert, *Desmarest Mamm.*, p. 370 (1822).

Distribution.—Brazil and Paraguay.

- | | | |
|---------------------------|--------|---------------------|
| a. Stuffed | Brazil | E. Blyth, 1865. |
| b. Skelet. mtd. ♂ | ..... | W. Rutledge. |
| c. Skeleton and carapace. | ..... | Zoological Gardens. |
| d. Skeleton ♂ | ..... | Rajah R. Mullick. |

Genus MANIS.

- Manis*, *Linnaeus Syst. Nat.*, 12th ed., i, p. 52 (1766).
Pholidotus, *Gray P. Z. S.*, p. 365 (1865).

Synopsis of Indian Species.

- a. Tail the same length as the body or rather shorter.
 b. Scales very large and light olive coloured; 11 to 13 longitudinal rows on the trunk; a mesial line of 14 on the tail.
M. pentadactyla, p. 330.
 b². Scales smaller and very dark; 15 to 18 longitudinal rows on the trunk; a mesial line of 16 to 20 scales on the tail.
M. aurita, p. 330.
 a². Tail rather longer than the body; scales very dark; 19 longitudinal rows on the trunk; and as many as 30 in the mesial line of the tail.
M. javanica, p. 331.

Manis pentadactyla.

- Manis pentadactyla*, *Linnæus Syst. Nat.*, 12th ed., i, p. 52 (1766) [in part]; *Sykes P. Z. S.*, 1831, p. 104; *Blyth J. A. S. B.*, xi, p. 453; *Turner P. Z. S.*, 1851, p. 219; *Blyth J. A. S. B.*, xxi, p. 351; *Horsfield Cat. E. I. Mus.*, p. 196; *Blyth Cat.*, p. 179; *Ferdon Mamm.*, no. 241, p. 314; *McMaster Notes on Ferdon*, p. 132; *Anderson Anat. Zool. Res.*, p. 341, pl. xxiv, figs. 1 and 2.
- Manis brachyura*, *Erxleben Syst. Reg. Anim.*, i, p. 98 (1777) [in part]; *Gray Illustr. Ind. Zool.*, ii, pl. xxii; *Blyth J. A. S. B.*, xx, p. 175.
- Manis crassicaudata*, *Et. Geoff. St. Hil. Cat. Mamm., Mus. Hist. Nat.*, p. 213 (1803)*; *Elliot Madras Journ.*, x, p. 218; *Tickell J. A. S. B.*, xi, p. 221 with plate; *Kelaart Prodr. Faun. Zeylan.*, p. 74; *Fentink Notes Leyd. Mus.*, iv, p. 203.
- Manis indicus*, *Lesson Hist. Nat. Mamm.*, iv, p. 520 (1834) [in part].
- Manis laticauda*, *Sundevall Kongl. Vetens. Akad. Handl.*, p. 258 (1842)*.
- Pholidotus indicus*, *Gray Cat. Carn. Mamm.*, p. 373 (1869); *Murray Zool. Sind*, p. 60.

The Scaly Ant Eater or *Manis*; Hind. and Sanskrit, Bajar-kit, Bajrakapta, Sillu, Sukunkhor; Kols, Armoi; Mahratta, Kaulimah; Telegu, Alawa; Mal., Alangu; Deccan, Banrohu (= Jungle carp); Bengal, Kot-pohu; Sind, Chulla Mirron; Cingalese, Caballaya.

Distribution.—Throughout India and Ceylon, from Sind in the west to Cuttack in the east, not extending into Lower Bengal, or found in the Himalayas.

<i>a-b.</i> 2 Skins	Shahbunder, Sind,	Karachi Mus. [Ex.]
<i>c.</i> Skin	.....	E. I. Mus., London.
<i>d.</i> Skin	.....	Purchased, 1871.
<i>e.</i> Skin, skeleton ♀	.....	Zoological Gardens.
<i>f.</i> Skin, skull, bones ♀	.....	Zoological Gardens.
<i>g.</i> Skin, skull, bones ♂	.....	Zoological Gardens.
<i>h.</i> Alc. ♀	.....	Zoological Gardens.
<i>j.</i> Alc. ♀	Chittagong ?	Zoological Gardens.
<i>k.</i> Fœtus of "e"	.....	Zoological Gardens.
<i>l.</i> Alc. fœtus	.....	Zoological Gardens.
<i>m.</i> Skull	Ceylon	E. F. Kelaart, A.S.B.
<i>n-o.</i> 2 skulls	.....	No history, A.S.B.
<i>p.</i> Stuffed	Chybassa	S. R. Tickell, 1842, A.S.B.
<i>q.</i> Stuffed	.....	A. Masters, A.S.B.
<i>r.</i> Skelet. mtd.	.....	R. W. G. Frith, 1848, A.S.B.
<i>s.</i> Skull	.....	No history.

Manis aurita.

- Manis pentadactyla*, *Linnæus Syst. Nat.*, 12th ed., i, p. 52 (1766) [in part]; *Cantor Ann. Mag. N. H.*, ix, p. 275 (1842); *Gray Cat. Hodgs. Coll.*, 1st ed., p. 36; *Blyth J. A. S. B.*, xxix, p. 93.
- Manis aurita*, *Hodgson J. A. S. B.*, v, p. 234 (1836); *id. J. A. S. B.*, x, p. 911; *Blyth Cat.*, p. 179; *Ferdon Mamm.*, p. 316; *Anderson Anat. Zool. Res.*, p. 352, pl. xxiv, figs. 3, 4; *Fentink Notes Leyd. Mus.*, iv, p. 202.

- Manis brachyura*, *apud* M'Clelland *P. Z. S.*, p. 183 (1839).
Manis dalmanni, *Sundevall Kongl. Vetens. Akad. Handl.*, p. 256, pl. iv, fig. 10 (1842)*; *Swinhoe P. Z. S.*, 1870, pp. 236 and 650.
Manis javanica, *apud* Adams *P. Z. S.*, p. 133 (1859); *Blyth* *J. A. S. B.*, xxix, p. 449.
Pholidotus dalmanni, *Gray Cat. Carn. Mamm.*, p. 371 (1869).

Distribution.—The Himalayas from Nepal to Assam, Upper Burma at considerable elevations, Yunnan and Southern China, including the Islands of Formosa and Hainan.

<i>a.</i> Skin	Sikkim	T. C. Jerdon, A.S.B.
<i>b-c.</i> 2 Skins	Sikkim	L. Mandelli.
ad. and juv.		
<i>d.</i> Skin	Himalayas	W. Theobald, A.S.B.
<i>e.</i> Skin juv.	Samagooting, Assam.	J. Butler, 1872.
<i>f-j.</i> 4 Skins	Momien, Yunnan, 6,000 ft., 6-68.	J. Anderson.
<i>k-l</i> 2 Skins	Sanda Valley, Yunnan, 4,000 ft., 7-68.	J. Anderson.
<i>m.</i> Skin	Hotha Valley, Yunnan, 5,000 ft., 8-68.	J. Anderson.
<i>n.</i> Skin	Kakhyen hills, 3,400 ft., 4-68.	J. Anderson.
<i>o-p.</i> 2 Skins	Kakhyen hills, 3,400 ft., 4-68.	J. Anderson.
<i>q.</i> Skin	♀ Mantin, Kakhyen hills, 19-1-75.	J. Anderson.
<i>r.</i> Skin	Tsitkaw, Kakhyen hills, 16-2-75.	J. Anderson.
<i>s.</i> Skin, skull and bones	.....	Zoological Gardens.
<i>t.</i> Skin, skele- ton	.....	Zoological Gardens.
<i>u.</i> Skin, skeleton	♂ "China"	W. Rutledge.
<i>v.</i> Alc.	Hotha, Yunnan.	J. Anderson.
<i>w-x.</i> 2 Stuffed	Momien, 6,000 ft., 6-68	J. Anderson.
<i>y.</i> Skeleton	♀ Kakhyen hills, Burma, 19-1-75.	J. Anderson.
<i>z.</i> Skull	Yunnan	J. Anderson.
<i>a</i> ² . Skull	China	R. Swinhoe, A.S.B.
<i>b</i> ² . <i>f</i> ² . 5 Skulls	.....	No history.

Manis javanica.

- Manis javanica*, *Desmarest Mamm.*, p. 377 (1822); *Cantor* *J. A. S. B.*, xv, p. 259; *Blyth* *J. A. S. B.*, xvi, p. 1274; *Müller Over de Zoogdieren in Tem. Verhandl.*, p. 37; *Sundevall Kongl. Vetens. Akad. Handl.*, 1842, p. 254, pl. iv, fig. 11*; *Turner P. Z. S.*, 1851, p. 219; *Horsfield Cat. E. I. Mus.*, p. 197; *Blyth Cat.*, p. 179; *Anderson Anat. Zool. Res.*, p. 352, pl. xxiv, figs. 5 and 6; *Fentink Notes Leyd. Mus.*, iv, p. 199; *Thomas P. Z. S.*, p. 72, 1886; *Anderson J. Linn. Soc.*, xxi, p. 342
Manis pentadactyla, *apud* *Raffles Linn. Trans.*, xiii, p. 249 (1822).

Manis leptura, *Blyth* *J. A. S. B.*, xi, p. 454 (1842); *id.* *J. A. S. B.*, xvi, p. 1273; *id.* *Cat.*, p. 180.

Manis aspera, *Sundevall Kongl. Vetens. Akad. Handl.*, p. 213 (1842)*.

Manis leucura, *Blyth* *J. A. S. B.*, xvi, p. 1274 (1847); *id.* *J. A. S. B.*, xxx, p. 91; *id.* *J. A. S. B.*, xlv, *Burma List*, p. 53.

Manis guy, *Focillon Rev. Mag. Zool.*, (2), ii, p. 513, pl. x (1850).

Pholidotus javanus, *Gray Cat. Carn. Mamm.*, p. 370 (1869).

Malayan, Pangolin; Burmese, Theng-khwe-khyat.

Distribution.—Burma from Arakan to Mergui, including Upper Burma, where it replaces *M. aurita* in the plains, the Malay Peninsula, Sumatra, Java, Borneo, and Celebes.

a. Skin	Bhamo, Burma, 600 feet, J. Anderson.
	2-68.
b. Skin	juv. Thaing Padan, Mergui, J. Anderson.
	8-2-82.
c. Skin, skull	Java Batavian Soc., 1844, A.S.B.
d. Skin, skull	..... No history, A.S.B.

[Type of *Manis leptura*, Blyth.]

e. Alc. foetus	..... A.S.B.
f-h. 3 Stuffed	Arakan Sir A. Phayre, A.S.B.
j. Skeleton	..... No history.
k-l. 2 Skulls	..... No history.

Genus **ORYCTEROPUS.**

Orycteropus, *Geoffroy St. Hil. Decade Philosophique*, (1795)*.

Orycteropus capensis.

Myrmecophaga afra, *Pallas Miscell. Zool.*, p. 64 (1778)*.

Myrmecophaga capensis, *Gmelin Syst. Nat.*, i, p. 53 (1788).

Orycteropus capensis, *Blyth Cat.*, p. 178 (1863).

Distribution.—South Africa.

a. Stuffed	South Africa	E. L. Layard, A.S.B.
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Order **MARSUPIALIA.**

This Order is entirely confined to the Australian and Neotropical Regions, so no definition is given.

Mr. Thomas' recent Catalogue of the Marsupialia and Monotremata in the British Museum has been rigidly adhered to in the following pages, and for full synonymy reference should be made to that work.

Genus **MACROPUS.**

Macropus, *Shaw Nat. Misc.*, i, text to pl. xxxiii (1790).

Macropus giganteus.

Yerboa gigantea, *Zimmerman Spec. Geogr. Quad.*, p. 526 (1777).

Macropus giganteus, *Shaw Nat. Misc.*, i, pl. xxxiii (1790); *Blyth Cat.*, p. 183; *Thomas Cat. Mars. B. M.*, p. 15.

Macropus major, *Shaw Gen. Zool.*, i, pt. ii, p. 505 (1800); *Gould Mamm. Austr.*, ii, pls. i, ii.

Distribution.—Australia generally, except the extreme north.

a. Skin	.....	No history, A.S.B.
b. Stuffed ♀	.....	Bengal Econ. Mus.
c. Stuffed, skelet. mtd. juv. ♂	.....	Barrackpore Menagerie, 1847, A.S.B.
d. Skeleton ♂	.....	Rajah R. Mullick.
e. Skeleton ♂	.....	Barrackpore Menagerie.
f. Skeleton ♀	.....	Rajah R. Mullick.
g. Skull	.....	N. Wallich, A.S.B.
h. Stuffed juv.	.....	Bengal Econ. Mus.

Macropus rufus.

Kangurus rufus, *Desmarest Mamm. Suppl.*, p. 541 (1822).

Macropus laniger, *Lesson Man. Mamm.*, p. 226 (1827).

Macropus rufus, *Bennett Cat. N. H. Austr. Mus.*, p. 6 (1837)*; *Thomas Cat. Mars. B. M.*, p. 25.

Osphranter rufus, *Gould Mamm. Austr.*, ii, pls. vi, vii (1853).

Distribution.—Eastern, South-Eastern and South Australia.

a. Stuffed ♀	.....	Purchased, 1886.
b. Stuffed ♂	Cachlan R., N. S. Wales	Bengal Econ. Mus.
c. Skeleton ♂	.....	W. Rutledge.
d. Skeleton	South Australia	Adelaide Mus. [Ex.]
e. Skin, skele- ton juv. ♀	.....	W. Rutledge.

Macropus ualabatus.

Kangurus bruni, *apud Desmarest N. Dict. d'Hist. Nat.*, (2), xvii, p. 42 (1817).

Kangurus ualabatus, *Lesson et Garnot Voy. Coquille Zool.*, i, p. 161, pl. vii (1826).

Macropus ualabatus, *Lesson Man. Mamm.*, p. 227 (1827); *Thomas Cat. Mars. B. M.*, p. 30.

Halmaturus ualabatus, *Gray App. Grey Travels Austr.*, ii, p. 402 (1841)*; *Blyth Cat.*, p. 184; *Gould Mamm. Austr.*, ii, pls. xxii, xxiii.

Distribution.—New South Wales and Victoria.

a. Stuffed	N. S. Wales	W. Rutledge.
b. Skeleton	.....	Zoological Gardens.
c. Skull	.....	No history, A.S.B.
d. Skeleton ♂	.....	No history, 1867.

Macropus ruficollis.*Var. A.—typicus.*

- ? *Halmaturus kingii*, *Illiger Abh. Akad. Berl.*, 1811, p. 102 (1815).
Kangurus ruficollis, *Desmarest N. Dict. d'Hist. Nat.*, (2), xvii, p. 37 (1817).
Halmaturus ruficollis, *Golfuss Isis*, p. 267 (1819); *Gould Mamm. Austr.*, ii, pls. xiv, xv.
Macropus ruficollis, *Lesson Man. Mamm.*, p. 226 (1827); *Thomas Cat. Mars. B. M.*, p. 32.

Var. B.—bennettii.

- ? *Macropus albus*, *Gray Spiceleg. Zool.* ii, p. 10 (1830).
Macropus bennettii, *Waterhouse P. Z. S.*, p. 103 (1837).
Halmaturus bennettii, *Gould Monog. Macrop.*, pl. vii (1841)*; *id. Mamm. Austr.*, ii, pls. xvi, xvii; *Blyth Cat.*, p. 184.
Macropus ruficollis, var. *bennettii*, *Thomas Cat. Mars. B. M.*, p. 34 (1888).

Distribution.—The typical variety is found in New South Wales and Victoria; var. *bennettii* is confined to Tasmania.

Var. A.—typicus.

- | | | | |
|------------|---|-------|--------------------|
| a. Stuffed | ♀ | ..... | Bengal Econ. Mus. |
| b. Skull | ♂ | ..... | W. Rutledge, 1872. |
| c. Skull |  | ..... | No history. |

Var. B.—bennettii.

- | | | | |
|-------------------|----------|-------|------------------------|
| a. Stuffed, skull | ♀ | ..... | A. Grote, 1862, A.S.B. |
| b. Skeleton mtd. | Tasmania | ..... | No history, A.S.B. |
| c. Skeleton |  | ..... | No history, A.S.B. |

Macropus dorsalis.

- Halmaturus dorsalis*, *Gray Charlesw. Mag. N. H.*, i, p. 583 (1837); *Gould Mamm. Austr.*, ii, pls. xxvi, xxvii.
Macropus dorsalis, *Waterhouse Cat. Mamm. Mus. Zool. Soc.*, p. 67 (1838); *Thomas Cat. Mars. B. M.*, p. 37.

Distribution.—Inland districts of Queensland and New South Wales.

- | | | | |
|------------|---|-------|---------------------|
| a. Stuffed | ♂ | | Brisbane Mus. [Ex.] |
|------------|---|-------|---------------------|

Macropus agilis.

- Halmaturus agilis*, *Gould P. Z. S.*, p. 81 (1841); *id. Mamm. Austr.*, ii, pls. xxiv, xxv.
Macropus agilis, *Giebel Odontogr.*, p. 43 (1855); *Thomas Cat. Mars. B. M.*, p. 42.

Distribution.—South-Eastern New Guinea, Northern Territory and Queensland.

a. Skin, skull Calcutta Exhibition.

Macropus thetidis.

Halmaturus thetis, Lesson *Man. Mamm.*, p. 229 (1827).

Halmaturus thetidis, F. Cuvier *Nat. Hist. Mamm.* livr., lvi, with plate (1829); *Gould Mamm. Austr.*, ii, pls. xxxi, xxxii.

Macropus thetidis, Giebel *Odontogr.*, p. 43 (1855); *Thomas Cat. Mars. B. M.*, p. 52.

Halmaturus ruficollis, *apud Blyth Cat.*, p. 184 (1863).

Distribution.—South Queensland, New South Wales and Victoria.

a. Stuffed ♂ Sydney Institution, 1841,
A.S.B.

♀ b. Skin, skull Maharajah of Burdwan,
A.S.B.

Macropus eugenii.

Kangurus eugenii, Desmarest *N. Dict. d'Hist. Nat.*, (2), xvii, p. 38 (1817).

Macropus eugenii, Lesson *Man. Mamm.*, p. 227 (1827); *Thomas Cat. Mars. B. M.*, p. 54.

Halmaturus derbianus, Gray *Charlesw. Mag. N. H.*, i, p. 583 (1837); *Gould Mamm. Austr.*, ii, pls. xxix, xxx.

Distribution.—Western and Southern Australia.

a. Skin, skull ♂ South Australia Adelaide Mus. [Ex.]

b. Stuffed ♀ W. Rutledge.

c. Alc. Brisbane Mus. [Ex.]

Macropus billardieri.

Kangurus billardieri, Desmarest *Mamm. Suppl.*, ii, p. 542 (1822).

Macropus billardieri, Lesson *Man. Mamm.*, p. 227 (1827); *Thomas Cat. Mars. B. M.*, p. 58.

Halmaturus billardieri, Gould *Monog. Macrop.*, pl. x (1841)*; *id. Mamm. Austr.*, ii, pls. xxxv, xxxvi.

Distribution.—South-Eastern South Australia, Victoria and Tasmania.

a. Skin, skeleton W. Rutledge.

b. Skin, skull ♂ W. Rutledge.

c. Skin, skull N. S. Wales Calcutta Exhibition.

Macropus brachyurus.

Kangurus brachyurus, Quoy et Gaimard *Astrolabe Zoologie*, i, p. 114, pl. xix (1830).

Macropus brachyurus, *Lesson Hist. Nat. Mamm.*, v, p. 378 (1836); *Thomas Cat. Mars. B. M.*, p. 60.

Halmaturus brachyurus, *Gray App. Grey Travels Austr.*, ii, p. 403 (1841)*; *Gould Mamm. Austr.*, ii, pls. xxxvii, xxxviii.

Distribution.—Western Australia.

a. Skull No history, A.S.B.

Genus PETROGALE.

Heteropus, *Fourdan Compt. Rend.*, v, p. 522 (1837).

Petrogale, *Gray Charlesw. Mag. N. H.*, i p. 583 (1837).

Petrogale xanthopus.

Petrogale xanthopus, *Gray P. Z. S.*, p. 249, pl. xxxix (1854); *Gould Mamm. Austr.*, ii, pls. xliii, xlv; *Thomas Cat. Mars. B. M.*, p. 64.

Distribution.—South Australia.

a. Skin	S. Australia	Adelaide Mus.
b. Skin	♀ S. Australia	Adelaide Mus.
c. Skin	.....	Purchased, 1867.
d. Skin, skeleton.	.....	W. Rutledge, 1869.
e. Stuffed	♂	W. Rutledge, 1869.
f. Skull	♂ S. Australia	Adelaide Mus.
g. Skull	.....	Maharajah of Burdwan, A.S.B.

Petrogale penicillata.

Kangurus penicillatus, *Gray Griffith Anim. Kingd.*, v, p. 204 (1827).

Macropus penicillatus, *Bennett P. Z. S.*, p. 1 (1835).

Heteropus albogularis, *Fourdan Comptes Rend.*, v, p. 522 (1837).

Petrogale penicillata, *Gray Charlesw. Mag. N. H.*, i, p. 583 (1837); *Gould Mamm. Austr.*, ii, pls. xxxix, xl; *Thomas Cat. Mars. B. M.*, p. 66.

Distribution.—Eastern Australia, Queensland to Victoria.

a. Skin, skull	♂	.....	Purchased.
b. Skin, skull	♀	.....	Purchased.

Genus ONYCHOGALE.

Onychogalea, *Cray App. Grey's Travels Austr.*, ii, p. 402 (1841)*.

Onychogalea frenata.

Macropus fraenatus, *Gould P. Z. S.*, p. 92 (1840); *Blyth Cat.*, p. 184.

Onychogalea fraenata, *Gray List Mamm. B. M.*, p. 88 (1843); *Gould Mamm. Austr.*, ii, pl. liv.

Onychogalea frenata, *Thomas Cat. Mars. B. M.*, p. 75 (1888).

Distribution.—Eastern Australia from Queensland to Victoria.

a. Stuffed	.....	Melbourne Inst., 1862, A.S.B.
b. Stuffed	♂	Bengal Econ. Mus.
c. Skull	.....	No history, A.S.B.

Onychogale lunata.

Macropus lunatus, *Gould P. Z. S.*, p. 93 (1840).

Onychogale lunata, *Gould Mamm. Austr.*, ii, pl. lv (1849); *Thomas Cat. Mars. B. M.*, p. 77.

Distribution.—South and West Australia.

a. Skin	S. Australia	Adelaide Mus. [Ex.]
b. Skeleton	juv. Yorke Peninsula, S. Australia.	Adelaide Mus. [Ex.]
c. Skull	S. Australia	Adelaide Mus. [Ex.]

Genus DORCOPSIS.

Dorcopsis, *Schlegel and Müller Tem. Verhandl.*, p. 130 (1839-44).

Dorcopsis mülleri.

Kangurus veterum, *Lesson et Garnot Voy. Coquille Zool.*, i, p. 164 (1826).

Didelphys bruni, *apud Quoy et Gaimard Astrolabe Zoologie*, i, p. 116 (1830).

Dorcopsis bruni, *Schlegel and Müller Tem. Verhandl.*, p. 131, pls. xxi-xxiv (1839-44); *Gould Mamm. Austr.*, ii, pl. li.

Halmaturus asiaticus, *apud Gray List Mamm. B. M.*, p. 91 (1843).

Lagorchestes gymnotis, *apud Blyth Cat.*, p. 184 (1863).

Macropus mülleri, *Schlegel Nederl. Tijdsch.*, iii, p. 353 (1866).

Dorcopsis mülleri, *Garrod P. Z. S.*, p. 49 (1875); *Thomas Cat. Mars. B. M.*, p. 87.

Distribution.—New Guinea and the adjoining Islands.

a. Skin	Maharajah of Burdwan, 1858, A.S.B.
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Genus LAGOSTROPHUS.

Lagostrophus, *Thomas P. Z. S.*, p. 544 (1886).

Lagostrophus fasciatus.

Kangurus fasciatus, *Pérouse et Lesson Voy. Terres. Austr.*, i, p. 114 (1807)*.

Macropus elegans, *G. Cuvier Regne Anim.*, i, p. 183 (1817).

Lagorchestes albipilis, *Gould Ann. Mag. N. H.*, (1), x, p. 2 (1842).

Lagorchestes fasciatus, *Gould Mamm. Austr.*, pl. lvi (1849).

Lagostrophus fasciatus, *Thomas P. Z. S.*, p. 544 (1886); *id. Cat. Mars. B. M.*, p. 100.

Distribution.—Western Australia.

a-b. 2 Skins ♂ ♀ West Australia Adelaide Mus. [Ex.]

Genus AEPYPRYMNUS.

Aepyprymnus, *Garrod P. Z. S.*, p. 59 (1875).

Aepyprymnus rufescens.

Bettongia rufescens, *Gray Charlesw. Mag. N. H.*, i, p. 584 (1837); *Gould Mamm. Austr.*, ii, pl. lxxv.

Hypsiprymnus melanotis, *Ogilby P. Z. S.*, p. 62 (1838).

Aepyprymnus rufescens, *Garrod P. Z. S.*, p. 59 (1875); *Thomas Cat. Mars. B. M.*, p. 103.

Distribution.—Eastern Australia.

a. Skin ♂ No history.

Genus BETTONGIA.

Bettongia, *Gray Charlesw. Mag. N. H.*, i, p. 584 (1837).

Bettongia cuniculus.

Bettongia setosa, *apud Gray Charlesw. Mag. N. H.*, i, p. 584 (1837).

Hypsiprymnus cuniculus, *Ogilby P. Z. S.*, p. 63 (1838).

Bettongia cuniculus, *Gould Mamm. Austr.*, ii, pl. lxxiii (1854); *Blyth Cat.*, p. 186; *Thomas Cat. Mars. B. M.*, p. 106.

Distribution.—Tasmania.

a. Skull W. Cracroft, A.S.B.

Bettongia penicillata.

Bettongia penicillata, *Gray Charlesw. Mag. N. H.*, i, p. 584 (1837); *Gould Mamm. Austr.*, ii, pl. lxi; *Thomas Cat. Mars. B. M.*, p. 110.

Hypsiprymnus ogilbyi, *Waterhouse Jard. Nat. Libr.*, xi, p. 185 (1841).

Distribution.—All Australia except in the North; not found in Tasmania.

a. Skin, skull West Australia Adelaide Mus. [Ex.]

b. Skeleton Major Turnbull.

Bettongia lesueuri.

Hypsiprymnus lesueuri, *Quoy et Gaimard Voy. Uranie*, p. 64 (1824)*.

Hypsiprymnus grayi, *Gould P. Z. S.*, p. 178 (1840).

Bettongia grayi, *Gray App. Grey's Travels Austr.*, ii, p. 403 (1841)*; *Gould Mamm. Austr.*, ii, pl. lxiv.

Bettongia lesueuri, *Thomas Cat. Mars. B. M.*, p. 112 (1888).

Distribution.—South and West Australia.

a. Skin, skull	South Australia	Adelaide Mus. [Ex.]
b. Skin, skull	.. ..	No history.
c. Skull	South Australia	Adelaide Mus. [Ex.]
d. Stuffed, skull	.....	W. Rutledge.

Genus TARSIPES.

Tarsipes, *Gervais and Verreaux P. Z. S.*, p. 1 (1842).

Tarsipes rostratus.

Tarsipes rostratus, *Gervais and Verreaux P. Z. S.*, p. 1 (1842); *Gould Mamm. Austr.*, i, pl. v; *Thomas Cat. Mars. B. M.*, p. 133.
Tarsipes spenserae, *Gray Ann. Mag. N. H.*, ix, p. 40 (1842).

Distribution.—Western Australia.

a. Skin	♂ W. Australia	Adelaide Mus. [Ex.]
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Genus ACROBATES.

Acrobates, *Desmarest N. Dict. d'Hist. Nat.*, xxv, p. 405 (1817).

Acrobates pygmæus.

Didephys pygmæa, *Shaw Zool. New Holland*, i, p. 5 (1794)*.
Acrobates pygmæus, *Desmarest N. Dict. d'Hist. Nat.*, xxv, p. 405 (1817);
Gould Mamm. Austr., i, pl. xxviii; *Blyth Cat.*, p. 183; *Thomas Cat. Mars. B. M.*, p. 136.

Distribution.—Southern Queensland, New South Wales and Victoria.

a. Stuffed	N. S. Wales	Sydney Inst., A.S.B.
b. Alc.	N. S. Wales	G. Nevill.

Genus DROMICIA.

Dromicia, *Gray App. Grey's Travels Austr.*, ii, p. 407 (1841)*.

Dromicia nana.

Phalangista nana, *Desmarest N. Dict. d'Hist. Nat.*, xxv, p. 477 (1817).
Phalangista gliriformis, *Bell Linn. Trans.*, xvi, p. 121, pl. xiii, xiv (1828).
Dromicia nana, *Gray App. Grey's Travels Austr.*, ii, p. 401 (1841)*; *Thomas Cat. Mars. B. M.*, p. 144.
Dromicia gliriformis, *Gould Mamm. Austr.*, i, pl. xxix (1845).
Dromicia unicolor, *Kreffft P. Z. S.*, p. 49 (1863).

Distribution.—Tasmania.

a. Skin, skull	No history.
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Genus **PETAURUS.**

Petaurus, *Shaw Nat. Misc.*, ii, text to pl. lx (1791).

Belideus, *Waterhouse P. Z. S.*, p. 151 (1838).

Petaurus australis.

Petaurus australis, *Shaw Nat. Misc.*, pl. lx (1791); *Thomas Cat. Mars. B. M.*, p. 151.

Didelphys petaurus, *Shaw Genl. Zool.*, i, pt. 2, p. 496 (1800).

Petaurus flaviventer, *Desmarest N. Dict. d'Hist. Nat.*, xxv, p. 403 (1817).

Belideus flaviventer, *Gould Mamm. Austr.*, i, pl. xxiii (1845).

Belideus australis et sciurus, *Blyth Cat.*, pp. 182, 183 (1863).

Distribution.—New South Wales and Victoria.

<i>a.</i> Skin, skull	N. S. Wales	Calcutta Exhibition.
<i>b.</i> Stuffed	N. S. Wales	Dr. Scone, 1864.
<i>c.</i> Skull	.....	Mrs. Turnbull, 1860, A.S.B.
<i>d.</i> Skull	.....	No history, A.S.B.

Petaurus breviceps.

Petaurus (*Belideus*) *breviceps*, *Waterhouse P. Z. S.*, p. 152 (1838).

Petaurus breviceps, *Gray App. Grey's Travels Austr.*, ii, p. 402 (1841)*; *Thomas Cat. Mars. B. M.*, p. 156.

Belideus breviceps, *ariet et notatus*, *Gould Mamm. Austr.*, i, pls. xxv, xxvi and xxvii (1849).

Distribution.—Queensland, New South Wales and Victoria.

<i>a-b.</i> 2 Stuffed,	Victoria	Dr. Scone, 1864.
2 skulls.		
<i>c-d.</i> 2 Alc.	N. S. Wales	Calcutta Exhibition.
and juv.		

Genus **PETAUROIDES.**

Volucella, *Bechstein Allgem. Ubers. vierf. Thiere*, ii, p. 351 (1800)*.

Petaurista, *Desmarest Mamm.*, i, p. 268 (1820).

Petauroides, *Thomas Cat. Mars. B. M.*, p. 163 (1888).

Petauroides volans.

Didelphis volans, *Kerr Linn. Anim. Kingd.*, p. 199 (1792)*.

Volucella nigra et macroura *Bechstein Allgem. Uebers. vierf. Thiere*, ii, p. 351 (1800)*.

Petaurus taguanoides, *Desmarest N. Dict. d'Hist. Nat.*, xxv, p. 400 (1817); *Blyth Cat.*, p. 182.

Petaurista taguanoides, *Desmarest Mamm.*, i, p. 269 (1820); *Gould Mamm. Austr.*, i, pl. xxii.

Petauroides volans, *Thomas Cat. Mars. B. M.*, p. 164 (1888).

Distribution.—Queensland to Victoria.

<i>a-b.</i> 2 Stuffed ♂ ♀	N. S. Wales	Dr. Scone, 1864.
<i>c.</i> Skull	.....	Purchased, A.S.B.
<i>d.</i> Skull	.....	T. Shawe, A.S.B.

Genus **PSEUDOCHIRUS.**

Pseudochirus, *Ogilby P. Z. S.*, p. 26 (1836).

Hepoona, *Gray, App. Grey's Travels Austr.*, ii, p. 402 (1841)*.

Pseudochirus peregrinus.

Didelphis peregrinus, *Boddaert Elench. Anim.*, i, p. 78 (1785)*.

Didelphis caudivolvula, *Kerr Linn. Anim. Kingd.*, p. 196 (1792)*.

Phalangista cooki, *apud Ogilby P. Z. S.*, p. 192 (1835); *Gould Mamm. Austr.*, i, pl. xviii.

Phalangista lanuginosa, *Gould Mamm. Austr.*, i, pl. xx (1858).

Pseudochirus peregrinus, *Thomas Cat. Mars. B. M.*, p. 172 (1888).

Distribution.—Queensland to South Australia.

<i>a.</i> Skin	.....	Melbourne Mus., 1864.
<i>b.</i> Skin, juv.	W. Australia?	Bengal Econ. Mus.

Pseudochirus occidentalis.

Pseudochirus occidentalis, *Thomas Cat. Mars. B. M.*, p. 174 (1888).

Distribution.—Western Australia.

<i>a.</i> Skin	Gawler Ranges, S. Australia.	Adelaide Mus. [Ex.]
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Pseudochirus cooki.

Phalangista cooki, *Desmarest N. Dict. d'Hist. Nat.*, xxv, p. 476 (1817).

Phalangista viverrina, *Ogilby P. Z. S.*, p. 131 (1837); *Gould Mamm. Austr.*, i, pl. xix.

Pseudochirus cooki, *Thomas Cat. Mars. B. M.*, p. 176 (1888).

Distribution.—Tasmania.

<i>a.</i> Stuffed	Tasmania	Bengal Econ. Mus.
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Genus **TRICHOSURUS.**

Trichosurus, *Lesson Dict. Class. d'Hist. Nat.*, xiii, p. 333 (1828).

Trichosurus vulpecula.

Var. A.—*typicus.*

Didelphis vulpecula, *Kerr Linn. Anim. Kingd.*, p. 198 (1792)*.

- Didelphis vulpina*, Meyer Uebers. Zool. Entd. Neuñoll., p. 23 (1793)*.
Phalangista vulpina, Desmarest N. Dict. d'Hist. Nat., xxv, p. 475 (1817);
Gould Mamm. Austr., i, pl. xvi; *Blyth Cat.*, p. 182.
Phalangista xanthopus, *Ogilby P. Z. S.*, p. 135 (1831).
Trichosurus vulpecula, *Fentink Notes Leyd. Mus.*, vii, p. 25 (1884); *Thomas Cat. Mars. B. M.*, p. 187.

Var. B.—fuliginosus.

- Phalangista fuliginosa*, *Ogilby P. Z. S.*, p. 135 (1831); *Gould Mamm. Austr.*, i, pl. xv.
Trichosurus vulpecula var. *fuliginosus*, *Thomas Cat. Mars. B. M.*, p. 190 (1888).

Distribution.—The typical variety is found throughout Australia, except in the extreme north; var. *fuliginosus* is confined to Tasmania.

Var. A.—typicus.

a. Skin, skeleton	.....	Zoological Gardens.
b. Skin, skeleton juv. ♀	.....	W. Rutledge.
c-d. 2 Stuffed	Australia	Dr. Scone, 1864.
e. Stuffed ♂	N. S. Wales	W. Rutledge, 1870.
f. Skeleton ♀	.....	Rajah R. Mullick.
g-h. 2 Skulls ad. and juv.	S. Australia	Adelaide Mus. [Ex.]
j. Skull	.....	No history, A.S.B.
k. Stuffed albino ♀	.....	W. Rutledge, 1870.

Var. B.—fuliginosus.

a. Skin, skull, bones.	.....	Purchased.
b. Skin, skeleton.	.....	Purchased.
c. Stuffed	Tasmania	C. F. T. Lloyd, A.S.B.
d. Skeleton, skin.	.....	Purchased.
e-f. 2 Skulls	Tasmania?	C. F. T. Lloyd, A.S.B.

Trichosurus caninus.

- Phalangista canina*, *Ogilby P. Z. S.*, p. 191 (1831); *Gould Mamm. Austr.*, i, pl. xvii.
Trichosurus caninus, *Thomas Cat. Mars. B. M.*, p. 191 (1888).

Distribution.—South Queensland and New South Wales.

- a. Stuffed, skull New South Wales Bengal Econ. Mus.

Genus PHALANGER.

Phalanger, *Storr Prodr. Method. Mamm.*, p. 33 (1780)*.

Phalangista, *Et. Geoff. St. Hil. Bull. Soc. Philom.*, i, p. 106 (1796)*.

Cuscus, *Lesson et Garnot Voy. Coquille Zool.*, p. 150 (1826).

Phalanger orientalis.

Didelphys orientalis, *Pallas Miscell. Zool.*, p. 59 (1766)*.

Phalanger orientalis, *Storr Prodr. Method. Mamm.*, p. 33 (1780)*; *Thomas Cat. Mars. B. M.*, p. 201.

Phalangista alba, *Et. Geoff. St. Hil. Cat. Mamm. Mus. Hist. Nat.*, p. 148 (1803)*.

Cuscus orientalis, *Gray List Mamm. B. M.*, p. 84 (1843).

Distribution.—Timor and the Islands to the east of New Guinea.

a. Skin, skull

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Calcutta Exhibition.

Phalanger celebensis.

Cuscus celebensis, *Gray P. Z. S.*, p. 105, pl. lxii (1858).†

Phalanger celebensis, *Thomas Cat. Mars. B. M.*, p. 206. †

Distribution.—Celebes and the Sanghir Isles.

a. Skin, skull Northern Territory? Adelaide Mus. [Ex.]

b. Skin, skeleton W. Rutledge.

Genus PHASCOLARCTUS.

Phascolarctus, *Blainville Bull. Soc. Philom.*, p. 46 (1816)*.

Lipurus, *Goldfuss Isis*, p. 271 (1819).

Phascolarctus cinereus.

Lipurus cinereus, *Goldfuss Isis*, p. 271 (1819).

Phascolarctus fuscus, *Desmarest Mamm.*, i, p. 276 (1820).

Phascolarctus cinereus, *Fischer Syn. Mamm.*, p. 285 (1829); *Gould Mamm. Austr.*, i, pls. xiii, xiv; *Thomas Cat. Mars. B. M.*, p. 210.

Distribution.—Eastern Australia from Queensland to Victoria.

a. Stuffed New South Wales No history.

b. Stuffed New South Wales Bengal Econ. Mus.

c. Skull ♂ Purchased.

d-e. 2 Skulls Victoria Calcutta Exhibition.

f. Skeleton New South Wales Purchased.

Genus PHASCOLOMYS.

Phascolomys, *Et. Geoff. St. Hil. Ann. Mus. Paris*, ii, p. 364 (1803).

Wombatus, *Desmarest N. Dict. d'Hist. Nat.*, 1st ed., xxiv, p. 20 (1803)*.

Phascolomys mitchelli.

Phascolomys mitchelli, *Owen Mitchell's Exped. Austr.*, ii, p. 368 (1838); *Thomas Cat. Mars. B. M.*, p. 213.

Phascolomys platyrhinus, *Owen Cat. Ost. Coll. Surg.*, i, p. 334 (1853).

Phascolomys latifrons, *apud Gould Mamm. Austr.*, i, pls. lvii, lviii (1859).

Distribution.—New South Wales, Victoria and South Australia.

a. Stuffed	.....	No history.
b. Stuffed juv. ♀	.....	W. Rutledge, 1870.
c. Generative ♀ organs in spirit.	.....	W. Rutledge, 1869.

Phascolomys ursinus.

Didelphys ursina, *Shaw Genl. Zool.*, i, pt. 2, p. 504 (1800).

Wombatus fossor, *Desmarest N. Dict. d'Hist. Nat.* 1st ed., xxiv, p. 20 (1803)*.

Phascolomys wombatus, *Leach Zool. Miscell.*, ii, p. 102 (1815).

Phascolomys wombatus, *Peron et Lesueur Voy. Terr. Austr.*, ii, p. 13, (1816)*; *Gould Mamm. Austr.*, i, pls. lv, lvi; *Blyth Cat.*, p. 186.

Phascolomys ursinus, *G. Cuvier Regne Anim.*, i, p. 185 (1817); *Thomas Cat. Mars. B. M.*, p. 215.

Distribution.—Tasmania.

a. Stuffed	Tasmania	Bengal Econ. Mus.
b. Skull	.....	C. J. T. Lloyd, A. S. B.
c. Skeleton juv.	.....	W. Rutledge, 1870.

Phascolomys latifrons.

Phascolomys latifrons, *Owen P. Z. S.*, p. 82 (1845); *Thomas Cat. Mars. B. M.*, p. 217.

Phascolomys lasiorhinus, *Gould Mamm. Austr.*, i, pl. lix, lx (1863).

Distribution.—South Australia.

a. Skeleton ♂	.....	Zoological Gardens.
b. Skull	Blanche town, Murray R., S. A.	Adelaide Mus. [Ex.]

Genus PERAGALE.

Macrodis, *Reid P. Z. S.*, p. 131 (1836).

Peragalea, *Gray App. Grey's Travels Austr.*, p. 401 (1841)*.

Peragale lagotis.

Perameles (Macrodis) lagotis, *Reid P. Z. S.*, p. 129 (1836).

Peragale lagotis, *Gray List Mamm. B. M.*, p. 96 (1843); *Gould Mamm. Austr.*, i, pl. vii; *Thomas Cat. Mars. B. M.*, p. 223.

Distribution.—South and West Australia.

a. Skin	S. Australia	Adelaide Mus. [Ex.]
b. Skeleton	.....	Adelaide Mus. [Ex.]

Genus **PERAMELES.**

Perameles, *Geoff. St. Hil. Bull. Soc. Philom.*, iii, p. 249 (1803)*.

Thylacis, *Illiger Prodr.*, p. 76 (1811).

Isoodon, *Desmarest N. Dict. d' Hist. Nat.*, xvi, p. 409 (1817).

Perameles obesula.

Didelphis obesula, *Shaw Nat. Miscell.*, viii, pl. ccxcviii (1793).

Perameles obesula, *Et. Geoff. St. Hil. Ann. Mus. Paris*, iv, p. 64 (1804); *Gould Mamm. Austr.*, i, pl. xii; *Blyth Cat.*, p. 182; *Thomas Cat. Mars. B. M.*, p. 231.

Isoodon obesula, *Desmarest N. Dict. d' Hist. Nat.*, xvi, p. 409 (1817).

Distribution.—Throughout Australia and Tasmania.

a. Skin, skull	.....	Calcutta Exhibition.
b. Skin	W. Australia	Adelaide Mus. [Ex.]
c-d. 2 Stuffed	.....	Melbourne Inst., 1862, A.S.B.
e. Stuffed	♂	Dr. Scone, 1864.
f. Skull	New South Wales	Adelaide Mus. [Ex.]

Perameles nasuta.

Perameles nasuta, *Et. Geoff. St. Hil. Ann. Mus. Paris*, iv, p. 62 (1804); *Gould Mamm. Austr.*, i, pl. xi; *Thomas Cat. Mars. B. M.*, p. 242.

Distribution.—Eastern Australia.

a. Alc.	Brisbane Mus. [Ex.]
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Perameles gunni.

Perameles gunni, *Gray P. Z. S.*, p. 1 (1838); *Gould Mamm. Austr.*, i, pl. ix; *Blyth Cat.*, p. 182; *Thomas Cat. Mars. B. M.*, p. 245.

Distribution.—Tasmania and perhaps Victoria.

a. Skin	♂ Victoria	Dr. Scone.
b. Stuffed	Tasmania	Melbourne Inst., 1862, A.S.B.

Perameles bougainvillei.

Perameles bougainvillei, *Quoy et Gaimard Voy. Uranie Zool.*, p. 56, *Atlas* pl. v (1824); *Thomas Cat. Mars. B. M.*, p. 246.

Perameles myosuroides, *Wagner Archiv f. Natur.*, vii, pt. i, p. 293 (1841); *Gould Mamm. Austr.*, i, pl. x.

Distribution.—Western Australia.

a. Skin	Gawler Ranges, S. Austr.	Adelaide Mus. [Ex.]
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Genus **THYLACINUS.**

Peracyon, *Gray Ann. Philos.*, (2), p. 340 (1825)*.

Thylacinus, *Temminck Monogr. Mamm.*, i, p. 60 (1827).

Thylacinus cynocephalus.

Didelphys cynocephala, *Harris Linn. Trans.*, ix, p. 174, pl. xix, fig. i, (1808).

Thylacinus harrisi, *Temminck Monogr. Mamm.*, i, p. 63 (1827).

Thylacinus cynocephalus, *Fischer Syn. Mamm.*, p. 270 (1829); *Gould Mamm. Austr.*, i, pls. liii, liv; *Blyth Cat.*, p. 180; *Thomas Cat. Mars. B. M.*, p. 255.

Distribution.—Tasmania.

a. Skin, impft.	.....	No history, A.S.B.
b. Skull	♂	Dr. J. Henderson, A.S.B.
c. Skull	♀	No history, A.S.B.

Genus SARCOPHILUS.

Sarcophilus, *F. Cuvier Hist. Nat. Mamm.*, livr. lxx (1837)*.

Diabolus, *Gray App. Grey's Travels Austr.*, p. 400 (1841)*.

Sarcophilus ursinus.

Didelphys ursina, *Harris Linn. Trans.*, ix, p. 176, pl. xix, fig. 2 (1808).

Dasyurus ursinus, *Geoff. St. Hil. Ann. Mus. Paris*, xv, p. 305 (1810).

Sarcophilus ursinus, *F. Cuvier Hist. Nat. Mamm.*, livr. lxx (1837); *Gould Mamm. Austr.*, i, pl. xlviii; *Blyth Cat.*, p. 180; *Thomas Cat. Mars. B. M.*, p. 259.

Distribution.—Tasmania.

a. Skin, skull	.....	Calcutta Exhibition.
b. Skull	.....	E. Blyth, A.S.B.

Genus DASYURUS.

Dasyurus, *Et. Geoff. St. Hil. Bull. Soc. Philom.*, i, p. 106 (1796).

Dasyurus maculatus.

Viverra maculata, *Kerr Linn. Anim. Kingd.*, p. 170 (1792)*.

Dasyurus macrourus, *Et. Geoff. St. Hil. Ann. Mus. Paris*, iii, p. 358 (1804).

Dasyurus maculatus, *Fischer Zoognosie*, ii, p. 584 (1813)*; *Gould Mamm. Austr.*, i, pl. xlix; *Blyth Cat.*, p. 181; *Thomas Cat. Mars. B. M.*, p. 263.

Distribution.—Eastern and South-Eastern Australia and Tasmania.

a. Skin, skull	N. S. Wales	Calcutta Exhibition.
b. Stuffed	Tasmania	G. Sceva, 1867.
c. Skull	Mt. Gambier, S. Austr.	Adelaide Mus. [Ex.]
d. Skull	.....	No history.

Dasyurus viverrinus.

Didelphis maculata, *Kerr Linn. Anim. Kingd.*, p. 199 (1792)* (*nec Viverra maculata*, *id. op. cit.* p. 170).

Didelphis viverrinus, *Shaw Genl. Zool.*, i, pt. ii, p. 491 (1800).

Dasyurus viverrinus, *Et. Geoff. St. Hil. Ann. Mus. Paris*, iii, p. 360 (1804); *Gould Mamm. Austr.*, i, pl. 1; *Blyth Cat.*, p. 181; *Thomas Cat. Mars. B. M.*, p. 265.

Dasyurus maugei, *Et. Geoff. St. Hil. Ann. Mus. Paris*, iii, p. 359 (1804).

Distribution.—South-Eastern Australia and Tasmania.

a. Skin, skeleton	.....	Zoological Gardens.
juv.		
b. Stuffed	Hunter R., N. S. W.	British Mus. [Ex.]
c. Stuffed	N. S. Wales	Bengal Econ. Mus.
d-e. 2 Skulls	.....	A. D. Bartlett, A.S.B.
f. Alc.	♂	Zoological Gardens.

Dasyurus geoffroyi.

Dasyurus geoffroyi, *Gould P. Z. S.*, p. 151 (1840); *Gould Mamm. Austr.*, i, pl. li; *Thomas Cat. Mars. B. M.*, p. 268.

Distribution.—All Australia, except extreme north and Tasmania.

a. Skin	West Australia	Adelaide Mus. [Ex.].
b. Skin	.....	Adelaide Mus. [Ex.].
c. Stuffed	.....	Purchased, 1846, A.S.B.
d. Stuffed	Melbourne?	No history.

Genus PHASCOGALE.

Phascogale, *Temminck Monogr. Mamm.*, i, p. 56 (1827).

Antechinus Macleay Ann. Mag. N. H., viii, p. 242 (1841).

Phascogale flavipes.

Phascogale flavipes, *Waterhouse P. Z. S.*, p. 75 (1837); *Blyth Cat.*, p. 181; *Thomas Cat. Mars. B. M.*, p. 289.

Antechinus stuarti, *Macleay Ann. Mag. N. H.*, viii, p. 242 (1841).

Antechinus flavipes, *Gould Mamm. Austr.*, i, pl. xl (1854).

Distribution.—Eastern Australia.

a. Stuffed	Melbourne Inst., A.S.B.
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Phascogale penicillata.

Didelphis penicillata, *Shaw Genl. Zool.*, i, pt. ii, p. 502 (1800).

Dasyurus tafa, *Et. Geoff. St. Hil. Ann. Mus. Paris*, iii, p. 360 (1804).

Phascogale penicillata, *Temminck Monogr. Mamm.*, i, p. 58 (1827); *Gould Mamm. Austr.*, i, pl. xxxi; *Thomas Cat. Mars. B. M.*, p. 294.

Distribution.—Throughout Australia, except the extreme north.

a. Skin	West Australia	Adelaide Mus. [Ex.]
b. Skull	South Australia	Adelaide Mus. [Ex.]

Genus SMINTHOPSIS.

Podabrus, *Gould Mamm. Austr.*, letterpress to pl. xlvii (1845).

Sminthopsis, *Thomas Ann. Mus. Genova* (2), iv, p. 503 (1887).

Sminthopsis crassicaudata.

Phascogale crassicaudata, *Gould P. Z. S.*, p. 105 (1844).

Podabrus crassicaudatus, *Gould Mamm. Austr.*, i, pl. xlvii (1845); *Blyth Cat.*, p. 181.

Podabrus macrurus, *Gould P. Z. S.*, p. 70 (1845).

Sminthopsis crassicaudata, *Thomas Cat. Mars. B. M.*, p. 306 (1888).

Distribution.—Throughout Australia.

a-b. 2 Stuffed	Melbourne Inst., A.S.B.
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Genus MYRMECOBIUS.

Myrmecobius, *Waterhouse P. Z. S.*, p. 69 (1836).

Myrmecobius fasciatus.

Myrmecobius fasciatus, *Waterhouse P. Z. S.*, pp. 69, 131 (1836); *Gould Mamm. Austr.*, i, pl. iv; *Thomas Cat. Mars. B. M.*, p. 312.

Distribution.—Western and Southern Australia.

a. Skin	South Australia (A. Anderson, 12-73).	Adelaide Mus. [Ex.]
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Genus DIDELPHYS.

Didelphys, *Linnaeus Syst. Nat.*, 12th ed., i, p. 71 (1766).

Didelphys marsupialis.

Didelphys marsupialis, *Linnaeus Syst. Nat.*, 12th ed., i, p. 71 (1766); *Thomas Cat. Mars. B. M.*, p. 323.

Didelphys cancrivora, *Gmelin Syst. Nat.*, i, p. 108 (1788).

Didelphys virginiana, *Kerr Linn. Anim. Kingd.*, p. 193 (1792)*.

Didelphys aurita, *Pr. Maximilian zu Wied Beitr. Natuurg. Bras.*, ii, p. 395 (1826)*.

Didelphys californica, *Bennett P. Z. S.*, p. 40 (1833).

Didelphys breviceps, *Bennett P. Z. S.*, p. 40 (1833).

Distribution.—America from the States to Chili and South Brazil.

a. Skin juv. ♂ Zoological Gardens.

Order MONOTREMATA.

Genus ECHIDNA.

Echidna, *G. Cuvier Tab. Elément. d'Hist. Nat.*, p. 143 (1798)*.

Tachyglossus, *Illiger Prodr.*, p. 114 (1811).

Echidna aculeata.

Myrmecophaga aculeata, *Shaw Nat. Miscell.*, iii, pl. cix (1792).

Ornithorhynchus hystrix, *Home Phil. Trans.*, p. 348 (1802).

Echidna hystrix, *Et. Geoff. St. Hil. Cat. Mamm. Mus. Hist. Nat.*, p. 224 (1803)*; *Gould Mamm. Austr.*, i, pl. ii.

Tachyglossus aculeatus, *Illiger Prodr.*, p. 114 (1811).

Echidna aculeata, *Garnot Bull. Soc. Philom.*, p. 45 (1825)*; *Thomas Cat. Mars. B. M.*, p. 379.

Echidna acrobata, *apud Blyth Cat*, p. 187 (1863).

Distribution.—Throughout Australia, replaced by geographical races in New Guinea and Tasmania.

a. Skin, skeleton	.....	Purchased.
b-d. 3 Stuffed	.....	A.S.B.
e. Stuffed	New South Wales	Bengal Econ. Mus.
f. Alc.	.....	Calcutta Exhibition.

Genus ORNITHORHYNCHUS.

Platypus, *Shaw Nat. Miscell.*, x, letterpress to pl. ccclxxxvi (1799) (*nec Herbst*).

Ornithorhynchus, *Blumenbach Voigt's Mag. Naturk.*, ii, p. 205 (1800)*.

Ornithorhynchus anatinus.

Platypus anatinus, *Shaw Nat. Miscell.*, x, pl. ccclxxxv, (1799).

Ornithorhynchus paradoxus, *Blumenbach Voigt's Mag. Naturk.*, ii, p. 205 (1800)*.

Ornithorhynchus rufus et fuscus, *Péron et Lessueur Voy. Terr. Austr., Atlas*, pl. xxxiv (1807)*.

Ornithorhynchus anatinus, *Waterhouse Nat. Hist. Mamm.*, i, p. 35(1846); *Gould Mamm. Austr.*, i, pl. i; *Blyth Cat.*, p. 186; *Thomas Cat. Mars. B. M.*, p. 388.

Distribution.—Eastern Australia and Tasmania.

<i>a.</i> Skin	♂	.....	No history.
<i>b.</i> Skin		N. S. Wales	No history.
<i>c.</i> Stuffed		S. E. Australia	No history
<i>d.</i> Stuffed		N. S. Wales	H. T. Prinsep, 1842, A.S.B.
<i>e.</i> Skeleton mtd.		N. S. Wales	A.S.B.
<i>f.</i> Alc.		Brisbane Mus. [Ex.]
<i>g.</i> Alc.		Calcutta Econ. Mus.

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[Names of synonyms are printed in italics; recognized names in Roman characters.]

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